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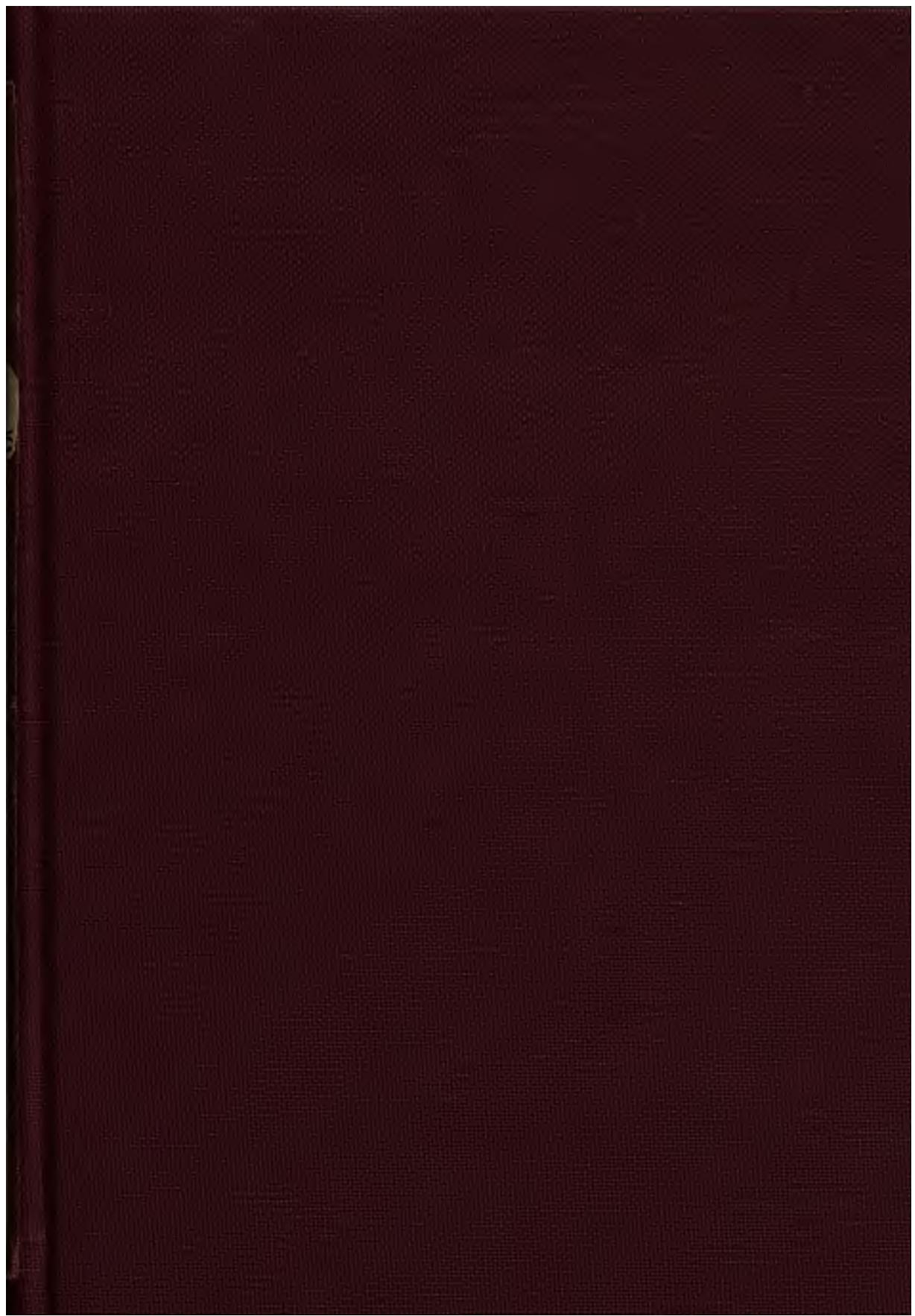
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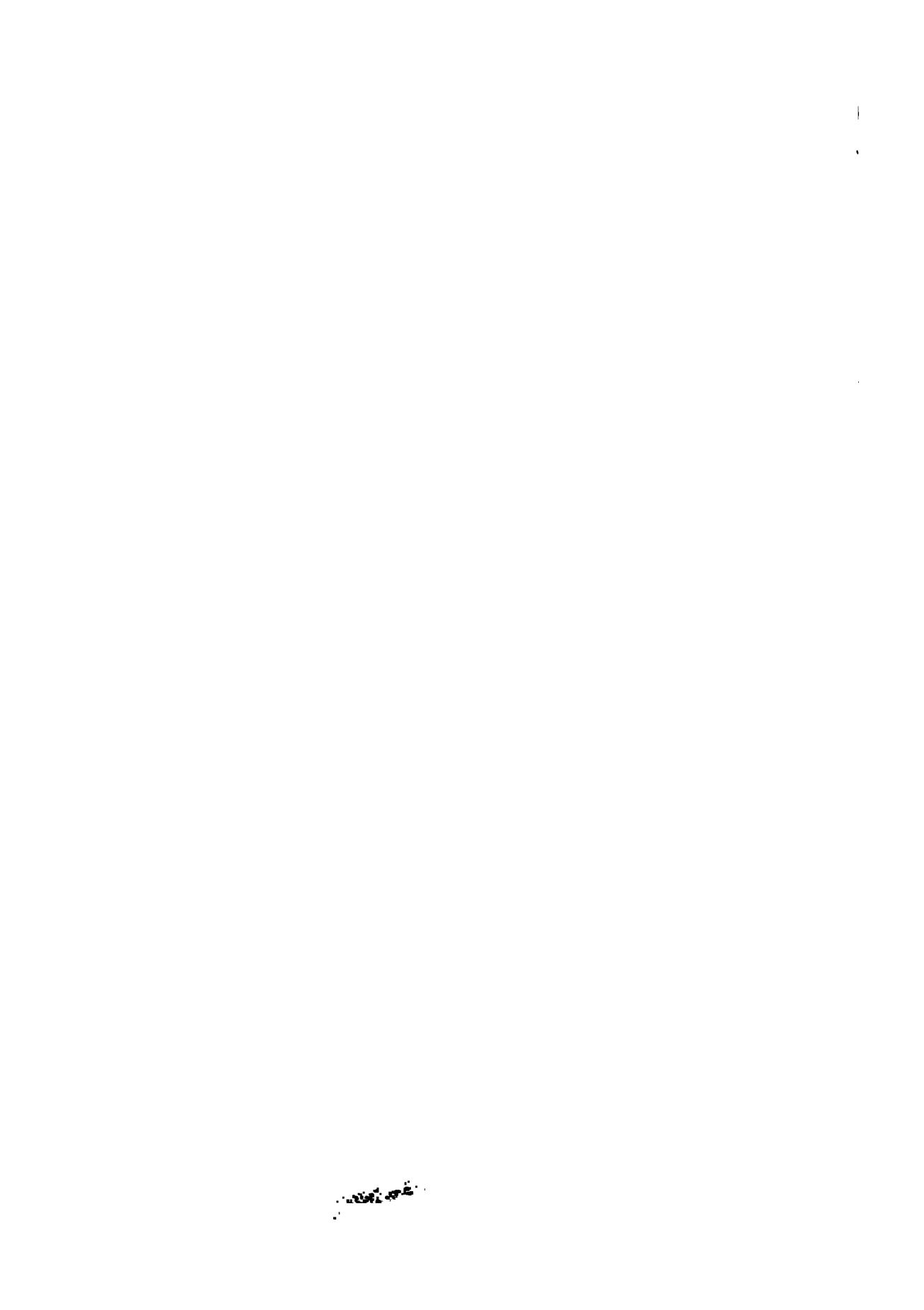


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THE PAPERS IN THIS PUBLICATION WERE
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HOUSING AND THE HOUSING PROBLEM

BY CAROL ARONOVICI, PH.D.,

General Secretary, Suburban Planning Association, Philadelphia.

The nation-wide movement for housing reform has been stimulated by the overwhelming evidence that has come to light within recent years and which has left no doubt in the minds of statesmen, social workers and the public as to the existence of a serious and increasingly difficult housing problem. The evidence gathered has been so emphatically based upon the evils of the worse sanitary conditions that all efforts in the direction of reform have been centered about the task of fixing a minimum standard for the 10 or 12 per cent of the population affected. The task of accomplishing the meager results that we have to our credit after twenty-five years of tireless and socially costly effort has been so great that we have lost sight of the broader question, namely: the establishment of economic and legal conditions that will make possible a normal development and maintenance of housing standards consistent with the progress of the most progressive of nations. In other words, we have concentrated an undue share of our efforts upon the pathological aspect of housing by exercising the utmost of our critical faculties in dealing with existing evils. An analytical study of the causes of these evils would have pointed the way towards a broader movement based upon the needs of the nation as a whole, rather than upon the conditions which, through the lack of statesmanlike policies in the housing of the people, affect very seriously only a minor share of the population. The result has been the development of a school of housing legislation which has the regulation of the tenement as its object and which bears the marks of a "New Yorkism" that has made housing reform one-sided and housing legislation practically synonymous with tenement legislation.

While we recognize the need and importance of tenement legislation and reform as a step in the direction of solving our housing problem and while we do not desire to discount the generous effort in the direction of removing our most serious of evils, it is of the utmost importance that confusion between housing as a problem of es-

tablishing minimum standards of sanitation and housing as a factor of social, moral and economic progress in the development of the nation as a whole should be avoided.

Economically speaking we may divide the families for whom housing accommodations must be provided as follows:

1. The subnormal who are unable to pay a rental that would yield a reasonable return upon a home of a minimum standard of sanitation.
2. The wage earners capable of paying rentals on the basis of a minimum standard of housing.
3. Well paid unskilled wage earners.
4. Skilled wage earners.
5. Lower grade business and professional classes.
6. High professional and business classes.
7. Leisure class.

It is safe to assume that the larger share of our housing problem affects the first two classes and that only in a slight and indirect way are the other classes living under conditions that fall below a minimum standard of sanitation and comfort. What proportions of the population of the country belong to each of the classes above suggested is more a matter of conjecture than of absolute certainty. We must admit, however, that what has been generally classed as the housing problem is only a small part of the larger question, namely, of providing facilities for the highest possible housing standard within the reach of the largest proportion of the people.

The number of houses that are constantly being built in the United States to accommodate the normal increase in the population and the growing influx of immigrants is not generally based upon the demand for accommodations, but rather upon certain social, economic and legislative conditions which in no way meet local and temporary contingencies. The result is a constant lack of adjustment between demand which is easily ascertainable, and the supply which is far removed from the numerical demand for the various classes of houses consistent with the classes of incomes and standards of the people demanding them.

The function of legislation is the fixing of standards; that of government, the creation of conditions that make the maintenance of such standards possible. The fixing of standards on a basis so rigid as to render progress impossible and the failure of government

to safeguard these standards by creating social and economic conditions consistent with them constitute a breach against the principle of personal freedom that is opposed to our conception of true democracy.

There is no subject to which we attach more social significance than we do to the home. The poet, the moralist, the efficiency expert and the social reformer have made the homes the center of their speculations and the means of realizing their individual and social ideals. We are all agreed that the one family house with private garden and plenty of open space is the condition towards which we should all strive and yet we have permitted our cities to develop into tenement centers with the most serious dangers to health, privacy, comfort and safety.

Home ownership as a force in promoting personal and social efficiency is everywhere recognized and yet the proportion of home ownership in this country is constantly on the decrease without stimulating governmental and legislative action against this tendency.

Esthetically unattractive homes are a permanent detriment to our cities and a loss of human pleasure that can hardly be estimated in terms of currency. Is the city or the state or private enterprise exercising an organized effort in the direction of raising the esthetic standard of the average American home?

Certain types of building, like the row of houses and tenements, are less conducive to healthful conditions and a low mortality rate than others like the single or semi-detached homes. Has a national or a local policy been established to encourage the better types?

These and many others are indisputable facts, some subject to scientific verification and formulation while others are based upon the accumulated experience and the inborn convictions which act as a powerful agent in rendering these factors effective.

The student of housing reform will find, however, that legislation has failed to recognize the broader need of housing the people of this country, while a mass of restrictive legislation, applicable in the main to building alone, and limited to the multiple dwelling as a prevailing type, has been accumulated. That many of these restrictive laws are based upon experience limited to a small number of localities and that they are derived from the study of pathological rather than normal conditions must be recognized. It must also be conceded that the regulations now in force are at best mainly the result of mutual concessions between legislation, housing reformers

and property owners. We have fixed a minimum amount of air space but no evidence is available as to the sufficiency of the amount as a means of insuring the safest minimum standard.

We demand certain space between buildings in order to insure the best light and ventilation and fail to realize some of the essential conditions, like prevailing winds, width of streets, orientation, height of buildings, that determine the safest minimum distance. If housing is of sufficient importance to demand regulation, it is also of sufficient importance to demand that these regulations be based upon scientific facts that cannot be questioned and do not allow of compromises. Scores of scientists abroad have found inquiries along these lines pregnant with principles which lend themselves to the most accurate formulation and are well suited for legislative enactment.

In the last analysis housing is an economic problem and while scientific investigation and a careful framing of housing legislation in accord with the results of these investigations are necessary, its ultimate solution must be found in its economic aspects. Regulation that becomes confiscatory or interferes with a proper return on the investment serves to aggravate rather than solve the housing problem and decreases the possibilities for a continued rise in the housing standard.

The task of solving economically the housing problem will be accomplished therefore not by wholesale and drastic regulation of the building method, but by a complete readjustment of our legislative and administrative methods in dealing with the economic factors that determine the character, cost, supply and rental of homes.

The factors that determine the cost of a home may be grouped into three main divisions: (1) Accessibility to economic centers; (2) accessibility to social centers; (3) investment in materials and labor. The first two factors are community factors pure and simple and depend upon the town or city plan; the last is a cost factor that is largely independent of local conditions or at least is subject only to slight variation due to such conditions.

The distribution of industrial, commercial and business centers, the distribution of parks, playgrounds, schools, theaters, museums, etc., contribute to the economic and social environment which determines to a very considerable extent the cost of a home and rents. The city plan and the distribution of the factors constituting the

economic and social environment as expressed in terms of facilities, time and cost of transit, determine the non-creative land values of a community which are an important cost factor in housing reform and which a carefully developed community plan may reduce to a minimum. By reducing the need for transit facilities through a proper adjustment and distribution of the factors that are essential to the economic and social life of the people and by providing an evenly distributed municipal transit system that serves as far as possible the whole population without materially discriminating in favor of or against particular sections of the municipality, the enhancement of land values may be checked and congestion with its attending evils avoided. Generally speaking, the actual cost of the home may be affected by various methods, some of which have been tried both in this country and abroad and have been found successful. Others are still in the experimental state. A broad classification of these methods is as follows:

1. Legislative and administrative.....	Taxation of land and improvements Tariff on building materials Standardization of housing regulations to reduce cost and prevent enhancement of values Municipal control of land Cheap and efficient transit facilities Banking regulations facilitating loans
2. Paternalistic.....	1. Public..... State and municipal building State and municipal financial loans 2. Private..... Four per cent and philanthropy Model industrial villages
3. Private initiative.....	Coöperative copartnership building Building and Loan Associations

It is not my purpose in this brief article to deal with the various methods affecting the cost of a home. All that I have attempted to do is to point out the most important and most generally accepted and practical methods employed that have brought about tangible results both in this country and abroad. The records of the large cities of Europe especially Paris, Berlin, Milan, Rome, London and

even some of the smaller cities have secured changes in the national as well as the local legislative and administrative machinery whereby land is made more accessible, taxes on wage earners' homes reduced, congestion removed or avoided and ownership of homes made possible for those able and willing to earn a reasonable income.

Many cities and even towns in Europe have been compelled to build homes for their families, especially those that are financially subnormal. In some cases cities have offered loans for the purpose of encouraging the building of individual homes or the construction of multiple dwellings that rent at low rates.

These steps have been made necessary by local conditions which by their seriousness as a local problem made the construction of new and additional homes a sanitary necessity. The city of Cleveland is the first one in this country to undertake the building of homes at public expense. New York has been the owner of tenements which had come into the hands of the city in various ways but which constituted a sanitary evil rather than a sanitary asset. Funds are made available in many European cities for the building of workmen's dwellings; in some cases up to 80 per cent of the total cost of the home and the rates of interest are fixed at from 2 to 4 per cent.

The Octavia Hill Association and other organizations as well as individuals in this country and abroad have made investments in new or old buildings and have attempted to furnish sanitary accommodations at reasonable rentals. Gary, Pullman, Fairfield, etc., and the many industrial villages of Europe represent a paternalistic development along certain lines of housing reform that have been productive of results both as social and economic experiments.

Private Initiative

The splendid development of the Garden Cities of England, Germany and the bold beginnings now being made in Italy are evidences of the economic and social value afforded by well organized private initiative and coöperation in home and community building. The work of the French coöperative societies emphasized the value of the coöperative factor as a saving in home building cost. The American building and loan associations, which represent a capital of over a billion dollars and a membership of very nearly two and one-half millions, embody a powerful agency for the handling of a con-

siderable share of the housing of the country. The efficacy of this agency in the direction of securing the best results I am not competent to discuss.

We have enumerated the various methods of promoting housing reform not with a view to weighing their social and economic values from the point of view of the United States but for the purpose of pointing out the variety of efforts in the direction of housing reform that are now being made throughout the civilized world and the broad field that they embody.

In this country we have endeavored to solve this important national problem mainly by means of local and state sanitary legislation. The fundamental economic, social and administrative causes have not claimed the attention of the housing reformer. Local muck-raking has masqueraded under the guise of scientific investigation while local sanitary legislation and inspection have been mistaken for the means of attaining a national housing ideal.

The time is now ripe for a thorough and nation-wide study of housing as a national issue. Public sentiment is organized and sufficiently enlightened to welcome a constructive program of housing reform that would affect the American people as a whole rather than the limited number of those whose homes constitute a problem of social pathology. The facts are easily obtainable and public as well as private agencies whose rightful function it is to investigate and formulate a broad national housing policy are legion.

A BRIEF HISTORY OF THE HOUSING MOVEMENT IN AMERICA

By ROBERT W. DE FOREST,
President, National Housing Association, New York.

Housing reform in America began in the city of New York. This was not because of any particular virtue in that city. Nor was it because of any superior foresight in city planning. The subject was forced upon the attention of the city of New York by overcrowding incident to its being the initial port of entry for foreign immigration, and by unsanitary conditions created as the result of attempting to house immigrants in old houses not originally intended for such occupation. It was also forced by the lamentable unsanitary conditions of the earlier types of tenement houses. Slum conditions existed in New York, just as they existed, though in less degree, in other cities in which the increase of population was not so sudden and unexpected, but it was tenement conditions in New York which first drew public attention to the need of housing regulation, and it was many years after New York began to legislate on this subject that other cities began to feel the same necessity and to look for a remedy on the same lines. The first tenement law regulation in America was enacted for New York City in 1867. Agitation for tenement regulation had long preceded this law. This agitation began seriously in 1842, when Dr. John H. Griscom, the city inspector of the board of health, called attention to existing conditions in his annual report to the board of aldermen. The pamphlet which Dr. Griscom submitted, entitled "A Brief Review of the Sanitary Condition of the City," contains a vivid description of the condition in New York at the time. It appears that there were 1,459 cellars, or underground rooms, then used as places of residence by 7,196 persons, and that there were as many as 6,618 different families living in courts or in rear buildings. These conditions had apparently developed largely by reason of the sudden increase of the city's population by immigration.

Mr. Robert M. Hartley, one of the most enlightened philanthropists New York has ever produced, and secretary of the then

recently organized Association for Improving the Condition of the Poor, in 1853, made a report on housing conditions of the city which again called attention to the necessity for regulation. His report was based upon a careful examination of the city. According to this report there were in 1850, 18,456 persons crowded together in 3,742 cellars, which were "always damp, badly ventilated, generally filthy, and beds of pestilence and disease." The state legislature in 1856 appointed a committee of their own numbers "to make an examination of the manner in which tenement houses are constructed in the city of New York, and report the same to the legislature, and also what legislation, if any, is requisite and necessary in order to remedy the evils and offer every protection to the lives and health of the occupants of such buildings." This committee made a report recommending legislation but no legislation followed.

It was not until the so-called "Council of Hygiene and Public Health" was organized in 1864, to improve the sanitary condition of the city, that any action was taken. Under its leadership the metropolitan board of health was established in 1866, and a year later, in 1867, the first tenement house law was enacted. There were at that time about 15,000 tenement houses in the city, all of which had been built without any legal regulation whatsoever. This law remedied some defects and improved to some extent existing tenement houses, but it did not secure any good types of new buildings.

Little attention seems to have been given to this subject from that time until 1877, when Mr. Alfred T. White, of Brooklyn, determined to benefit the working people of his city by providing them with decent and comfortable homes. He then built his well known "Home Buildings," in Brooklyn, and a year later he erected an entire block of model tenements, with a large park or courtyard in the center. Mr. White's tenements were popular from the start and earned 7½ per cent during the first year of their existence. This was an object lesson of the first importance. It demonstrated that good housing was appreciated and that good housing accommodations were commercially profitable. Wide publicity was given to Mr. White's successful experiment, and public attention was again called to this subject, so important for the city of New York. A mayor's committee was appointed at a public meeting held in Cooper Union to devise measures to carry tenement house reform into effect. Capital

was raised for improved dwellings in old New York to follow Mr. White's Brooklyn example, and a new tenement house law was enacted in 1879, which for the first time limited the percentage of lot to be occupied by a new tenement.

Meantime the movement for tenement reform in New York grew in force. The experience gained by different efforts, successful and unsuccessful, pointed the way, and the movement finally culminated in the New York state law for cities of the first class, passed in 1901, which made an epoch in tenement regulation, not only in the provisions of the law itself but also in placing the enforcement of the law under the jurisdiction of a new city department called the tenement house department. The successive steps by which this result was accomplished included a legislative commission in 1884, of which Dr. Felix Adler was chairman, the amendments of the law in 1887 as a result of the recommendations of this commission, another legislative commission in 1894, of which the late Richard Watson Gilder was chairman, some of the recommendations of which were enacted into law in 1895, and the state tenement commission of 1900, of which the author was chairman, which drafted the tenement house law of 1901, now in force, and the amendments to the New York City charter under which the tenement house department was created.

Wide publicity had been given throughout the country to the movement for housing reform in New York, which resulted in the law of 1901, and the first fruit of that legislation was the tenement house law of the adjacent state of New Jersey. Jersey City and Hoboken, in New Jersey, separated only by the Hudson River from New York, were practically suburbs of New York. In a less intimate sense the same was true of Newark. The same tenement evils which developed in New York had been duplicated in Jersey City. It was quite natural, therefore, that the New Jersey law should follow closely our New York law. The New Jersey law was passed in March, 1904.

Up to this time the movement for housing reform and the enactment of housing regulation had taken the form of tenement regulation, using that word in its legal sense, as applicable to all multiple houses in which three or more families lived independently. The tenement evils, however, existed in comparatively few cities outside of New York and its suburbs. The development in other cities had

been largely that of the small house, frequently the small frame house, and the more acute problems in other cities related rather to slum conditions than to the evils of multiple dwellings. Housing reform in other cities had, not unnaturally, imitated in greater or less degree, the New York regulations affecting tenements. Among the cities which have framed their housing codes to meet their own special conditions may be mentioned Columbus, by way of illustration. Its housing code regulates the building, alteration and maintenance of single family houses as well as tenements.

The growing national interest in this subject led in 1910 to the organization of the National Housing Association. The board of directors of this association was constituted by representative men and women from all parts of the United States as well as Canada.

As illustrating the progress of the movement toward better housing conditions, at the time this association was organized, less than four years ago, there were not ten cities outside the states of New York and New Jersey in which there was any housing regulation or any serious effort to secure such regulation. A year ago, when the author had occasion to obtain statistical information on this subject, there was state legislation applicable generally to certain classes of cities in the states of New York, California, Connecticut, Massachusetts, New Jersey, Pennsylvania, Indiana and Wisconsin. There was regulation either by state law or by ordinance in the following cities outside of the states named: Baltimore, Md.; Chicago, Ill.; Cincinnati, O.; Cleveland, O.; Columbus, O.; Louisville, Ky., and St. Louis, Mo. Within the past twelve months (I am speaking as of November 1, 1913) the following additional progress has been made: Boston Mass., by a state law applicable only to this city, has changed the definition of a tenement house from the four-family house to the three-family house. Under the previous law, in force a year ago, there had been about 7,500 houses subject to regulation in Boston. At the present time, by this change of the law and by the construction of the year, about 35,000 tenement houses have come under this jurisdiction. In California a new tenement house law has been enacted, marking a needed advance in wise regulation. In Cincinnati, O., added powers have been given to the tenement house inspectors. Cleveland, O., is at the moment drafting a new tenement house code. Columbus, O., is regulating the construction of single-family and two-family houses as well as tenements. The state

of Connecticut has enacted more advanced legislation. The state of Indiana has passed a new law applicable to all cities of over 10,000 inhabitants. Louisville, Ky., has now a law based on the model tenement house code. Thirteen towns of Massachusetts have adopted the provisions of the state tenement house law. Pennsylvania has passed a new law applicable to Philadelphia, its only city of the first class, marking a notable advance. Pittsburgh, Pa., a city of the second class, has assembled its ordinances and passed new ones, the whole forming a housing code considerably in advance of the general state law applicable to such cities. St. Louis, Mo., has passed a new ordinance, dealing chiefly with sanitation and aimed to abolish gradually privies in tenement houses. The state of New York has enacted a tenement house law for cities of the second class, applicable to a number of important cities, including Syracuse and Albany, a notable step forward. Seattle, Wash., has adopted ordinances intended to improve tenement conditions. Duluth, Minn., has adopted a well-framed ordinance regulating its tenements. The state of Indiana has adopted a new tenement house law by overwhelming majorities in both houses of its legislature.

While all these laws and ordinances are not ideal, and are not adequate from the point of view of those who are best acquainted with this subject, they are all steps in the right direction. The widespread national interest in this movement, which has borne fruit in legal regulation, is further illustrated by the fact that at the present time, including the cities named and the cities in states which have state regulation applicable to them, there are known to be 87 cities in America, of which 82 are in the United States and 5 in Canada, in which public attention is directed to housing reform. In many of these cities the movement is still in embryo; in others regulation more or less satisfactory is in force. The following is a list of these cities, classified by states:

	<i>Alabama</i>	<i>Connecticut</i>
Birmingham		New Britain
		New Haven
	<i>California</i>	Hartford
Los Angeles		Stamford
Oakland		Waterbury
Pasadena		
Sacramento		<i>District of Columbia</i>
San Francisco		Washington

	<i>Georgia</i>	
Atlanta		Wenham
Savannah		Weston
	<i>Illinois</i>	Weymouth
Chicago		Winthrop
Springfield		Worcester
	<i>Indiana</i>	
Evansville		
Indianapolis		
South Bend		
Terre Haute		
	<i>Kentucky</i>	
Louisville		
	<i>Louisiana</i>	
New Orleans		
	<i>Maryland</i>	
Baltimore		
	<i>Massachusetts</i>	
Arlington		
Belmont		
Boston		
Braintree		
Brockton		
Brookline		
Cambridge		
Fall River		
Haverhill		
Lawrence		
Lexington		
Lowell		
Lynn		
Milton		
Newburyport		
North Andover		
Salem		
Springfield		
Stoneham		
Taunton		
Wakefield		
Walpole		
Watertown		
	<i>Pennsylvania</i>	
Erie		
Harrisburg		
Philadelphia		
Pittsburgh		
	<i>Michigan</i>	
Detroit		
Grand Rapids		
	<i>Minnesota</i>	
Duluth		
	<i>Missouri</i>	
Kansas City		
	<i>New Jersey</i>	
Newark		
	<i>New York</i>	
Albany		
Brooklyn		
Buffalo		
Elmira		
Mt. Vernon		
Newburgh		
New York City		
Rochester		
Schenectady		
Syracuse		
Troy		
Utica		
Yonkers		
	<i>Ohio</i>	
Cincinnati		
Cleveland		
Columbus		
Youngstown		
	<i>Oregon</i>	
Portland		

	<i>Rhode Island</i>	<i>Virginia</i>
Newport		Richmond
Providence		
Pawtucket		
Woonsocket		
		<i>Wisconsin</i>
		Milwaukee
		<i>Canada</i>
	<i>Tennessee</i>	Hamilton, Ontario
Nashville		Montreal, Quebec
		Ottawa, Ontario
	<i>Texas</i>	Toronto, Ontario
Dallas		Winnipeg, Manitoba

This list is by no means complete. There are undoubtedly other cities not named which should be added. I am simply using the latest statistics which I have at hand. That so much progress has been made in so brief a time argues well for the progress we have a right to expect in the future.

Nor is the advance in housing reform confined to cities or to statutory regulation. Many large employers of labor, notably corporations which need accommodation for their operatives or employees, are giving enlightened attention to this subject. The United States Steel Corporation has made careful plans for housing its workers at its new plant in Duluth, and is studying the question even more thoroughly before making plans for its projected plant at Ojibway. In many of the smaller towns and country districts, industrial villages have sprung into existence that owe not only their being but also their form to the enlightened management of the works to which they are appurtenant. The Goodrich Tire and Rubber Company, of Akron, and the American Rolling Mills at Middletown, O., illustrate this phase of the movement. The same may be said of many New England communities.

Nor should the garden city movement in America be unmentioned, a notable example of which, intended for the middle rather than the working classes, is that of the Russell Sage Foundation at Forest Hills, L. I. To more than mention this movement would extend this article beyond its allotted space.

Meanwhile the work of reform has steadily gone on in the city of New York, where it originated. The New York law has been amended from time to time to meet practical conditions. It has been strengthened where it was found to be weak; it has been relaxed where it could be relaxed without detriment to the principles in-

volved and the ends to be attained. A notable expression of popular approval of the law occurred in 1912 (less than two years ago), when a decision of the New York court of appeals, on technical grounds, threatened to destroy the tenement house law of 1901, which had been on the statute books for over eleven years and which had found almost universal acceptance. An appeal was made to the governor of the state for an emergency message, which alone made prompt legislation possible under legislative rules, and the technical defect was remedied by legislative action within a few days after the decision was handed down.

As illustrative of the degree in which this law has been enforced in the city of New York, and the result of its enforcement, the following facts are pertinent. At the time of its enactment there were in the city of New York fruitful sources of disease in the shape of more than 9,000 "school sinks" or privy vaults, located in tenement house yards. These "school sinks" were practically open privies for the common use of all the inmates of the houses to which they were appurtenant, flushed occasionally into the sewers with water. The law required the abolition of these "school sinks" and the substitution for them of toilets in the houses, and prescribed that no toilet should furnish accommodation for more than two apartments. It also prescribed that these toilets should open to the outer air. At the present time only 375 "school sinks" exist in the city of New York, most of which are in outlying sections of the city, where sewers have not yet been installed. At the time this law was enacted there were over 350,000 dark rooms in the city of New York; that is, rooms which had no opening to the outer air. The law made the ventilation of these rooms to the outer air obligatory. At the present time there remain in the city of New York only about 76,324 such rooms. During the first eleven years that the new tenement house law had been in operation, that is from 1902 to 1912, inclusive, 22,925 tenement houses were built, of an estimated cost of \$708,983,489, containing 248,815 apartments, accommodating, on an average of five persons to each family, 1,244,075 persons. While there is no obligatory provision in the law with regard to baths, it should be noted that more than 87 per cent of these new-law tenements have a bath in each apartment; more than 4 per cent have baths in the houses but not in each apartment, and only about 9 per cent have no baths at all. Improvement of the sanitary conditions of old

tenements, and the improved sanitary regulations with regard to new-law tenements in New York City, have been only two of several causes favorably affecting the death rate. That they have been an important factor in this result is self-evident. The death rate in New York City for 1900, before this new cause began to operate, was 20.057 in the thousand. This has gradually decreased, until the death rate in 1912 was only 14.11 in the thousand. Translating this into human lives, based on a population of 5,000,000, it means an annual saving of nearly 30,000. Translating it into immunity from sickness would give much larger figures.

No history of housing reform in America would be complete without the mention of two names—Jacob A. Riis and Lawrence Veiller. Jacob A. Riis began to write on this subject more than thirty years ago. His voice at first was like the voice of one "crying in the wilderness." But it caught the listening ear. His many magazine articles and books, notably *How the Other Half Lives*, produced a profound impression on the country and did much to create the popular sentiment on which any successful reform must be based. Lawrence Veiller initiated the tenement house exhibition of 1900, which preceded the New York state commission of that year. He became secretary of this commission, and when the new tenement house department of New York City was organized became the first deputy commissioner. His books on the subject, published by the Russell Sage Foundation, entitled *Housing Reform—A Handbook for use in American Cities*, and *A Model Tenement House Law*, constitute the best literature on this subject, and should be in the hands of all who are seeking to inform themselves about it and to promote its cause by intelligent regulation.

THE RELATION OF LAND VALUES AND TOWN PLANNING

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As men learn to coöperate in their industry, their commerce, their intellectual pursuits and their social pleasures, their desire to live together becomes stronger. The village becomes a town, the town spreads and becomes a city, and owing to this increase of size, competition to occupy the more central stations becomes keen because of the further possibilities they offer for coöperation. By multiplying the opportunities of life and industry these central positions acquire a high value and the more energetic people are willing to pay a good price for the privilege of occupying them. In this way arises site value or ground rent, which is simply a payment for the right to occupy the more profitable places.

Theoretically, ground value represents the sum of the advantages which any site has by virtue of its position, beyond those attaching to the best unoccupied places. If the whole of the land were in one ownership, and the advantages of each place could be accurately assessed, then actual ground value or rent would approach as nearly to theoretical rent as would leave a margin of advantage sufficient only to stimulate the necessary competition.

Seeing that the advantages of the best sites can only be enjoyed by the few, and that the larger number of people must put up with the less good positions, the principle of equality of opportunity is not best satisfied by a low ground rent; but on the contrary, leaving aside for the moment the question of who enjoys the ground rent, that principle would seem to require that ground rents or values should be high, that those who enjoy positions of exceptional privilege or opportunity should pay approximately the full value for them. In a community in which industrial activities are on an individualistic basis, and where the site value is mainly used to defray public expenses, either by taxation or by public ownership, rent would be a means of equalizing the positions for everybody, as its effect would be to handicap the exceptionally well-placed. In a mod-

ern community there are many factors disturbing this simple position; but it should be definitely recognized that it is not to the interests of the many that site value or site rent should be low, and can only become so to a limited extent when the greater part of that rent is enjoyed by a few individuals. The amount of rent which may be attached to any position is not, however, due only to the advantage of the position, but to all the advantages of any kind, the enjoyment of which depends in any degree on the location. The establishment of a convenient railway station may very greatly enhance the value of the land around it; and nearly all public improvements increase the value of the sites in their neighborhood. On the other hand, restrictions upon the use that may be made of a site will limit the value materially; and this is equally true whether those restrictions are due to custom or to law. In modern cities then we see that ground value is to an increasing extent controlled or influenced by public or semi-public activities, even in those countries where the theoretic principles of individualism have been least interfered with.

So long as these activities of the public are not understood, the owners of land accept their effects as part of a natural law of supply and demand and submit with good or bad grace to have the value of their land increased or reduced. If an owner tries to use his land for the building of high tenements in a country where the people refuse to adopt this system of housing, and if, in consequence, he fails to realize the high value of his land which may be obtained by this use of it in other districts, he hardly thinks of asking the community to compensate him; but if the community, by regulation, forbids him to build more than a limited number of stories, he immediately thinks that he is entitled to compensation. In like manner, if an owner has a strip of his land rendered useless for building by reason of some objectionable erection on an adjacent plot, he has to accept that as one of the natural circumstances causing fluctuations in land values; but if the community in the public interest seeks to set back his building a few yards to widen the street, he claims the highest compensation that he can induce any valuer to assess.

I think, therefore, that the second point that should be realized in reference to land values is that they have ceased to represent merely the result of unconscious competition; but that they are constantly being increased and reduced by conscious communal action

of one sort or another. Apart from one important circumstance, there would seem to be no sufficient reason why the community should not regulate the use of land entirely in the public interest, and with as little regard to the effect on individual land values as is paid by the natural law of supply and demand. That one important circumstance is that the whole financial arrangement of our society depends to a large extent on the stability of land values. We cannot, therefore, consider policies which affect these values purely in regard to any abstract right, but must also consider their expediency; whether the gain will counterbalance any evils arising from disorganisation of finance and commerce.

There can be little doubt that urban problems would be immensely simplified if the whole of the land on which the city stands and over which it may be likely to extend were owned by the community, and if the rent that is payable by the privileged for the best positions could be used to defray communal expenses, the benefits of which are enjoyed by all. We see in Europe many instances where the urban community owns so much land that all communal expenses are defrayed out of the resulting revenue and in some cases there is even a distribution made annually of the surplus income, either in cash or produce.

There is, however, a very considerable difficulty in reaching this position when once the contrary one of private ownership has been established. It arises from the fact that the increase in land values is so considerable when a town grows, that individuals are willing to speculate extensively on the probability of this increase; and that around existing towns the speculative value of land is always very considerable, and any community purchasing that land must necessarily enter into the speculation. If the town should continue to grow that speculative value would, no doubt, very soon be overtaken. On the other hand, if the town should remain stationary, the speculative value might not be reached for a long period, might even never be reached, and the public would in that case be saddled with a very heavy charge.

There are two main interests which the public have in this question. The first and most important is to secure that land shall be used in the best possible way in the public interest. This is as important in urban centers as it is in rural districts. The second public interest is that the value or ground rent which is paid by privileged

people for the occupation of advantageous sites should be enjoyed as far as possible by the whole of the people who are excluded from those sites, so that the inequality of opportunity should, as far as possible, be removed.

Of these two interests, the first is overwhelmingly the more important. Indeed so important is it, that if a case could be made out proving that the public, acting in their corporate capacity, were incapable of securing as good and effective a use of land as individual owners could secure, it would justify leaving to individual owners the exclusive enjoyment of a substantial share of the ground value resulting from their use of land, as an inducement to them to manage it in the best manner. Cases could no doubt be cited in which individual management has been better than public management, and where the community as a whole has been benefited by it. We are, however, being forced today towards public control or management because, owing to the size and complexity of modern towns, the individual owner acting by himself is no longer able to secure that use of land which is most desirable in the public interest, even where it would be to his own interest to do so; and when, as frequently happens, the most desirable use would be detrimental to his own personal interest, one can hardly expect him to go out of his way to secure it. It is fairly evident that neither the interest of the owners collectively, nor the interests of the public can be served in a modern city by leaving unfettered individual control. It is only through collective management or control that many of the most important requirements of a modern city can be met. For this reason nearly all civilized communities are attempting to regulate, by means of town plans and town planning schemes, the use and development of urban land, to prevent the congestion of traffic, overcrowding of buildings, and indiscriminate mixture of buildings of different classes; and to secure the advantages of properly protected residential quarters, of industrial areas provided with adequate conveniences, and of commercial centers where the activities are not hindered by congestion of traffic or the occupation of valuable positions by factories and warehouses which should have been placed elsewhere.

One result of this regulation of development by town planning may be to control very materially the development of land values. In so far as town planning increases the efficiency of the industries and commerce of a town, in so far as it improves the opportunities

of intellectual and social life, and adds to the amenity of the residential areas, it will undoubtedly increase the total sum of land values, because it will add to the actual advantages of the city sites as compared with those offered by the nearest available unoccupied positions outside. But in so far as town planning restricts the use that may be made of individual sites, limiting for example the height of buildings or the number of houses that may be built upon each acre of ground, it must tend to reduce the value of land any part of the value of which is due to the expectation that a somewhat congested use of it would be permitted. In the same way the restriction of certain areas for particular classes of buildings, as, for instance, the reservation of areas for industrial buildings only, may, at any rate for a time, have the effect of reducing the value of those areas. The reservation of land for open spaces must also have the effect of taking away from the areas so reserved all prospect of a building value. On the other hand, wherever areas are reserved for open spaces in the immediate vicinity of a town, the reservation must have the effect of increasing the value of other land farther out, because the prospective buildings which expectation has placed on the land reserved for open spaces, expectation will now place on the land next available. Moreover, the limitation of the amount of building which may be placed on an area of residential land will have the effect of spreading the building value due to the residential use over a much larger area.

Let us for a moment examine the effect of limiting the number of houses to the acre upon any piece of land. At first sight it would seem that to halve the number of houses that may be put upon an area of land would have the effect of reducing its building value by half. But this is by no means the case. The increased value of land due to the increased crowding of buildings upon it represents a very diminishing return. The greater the number of houses placed upon an acre of land, the greater is the proportion of the land which must be occupied by roads; and the greater the number of roads on any piece of land the greater is the amount of street area compared with the effective building frontage. So true is this that very frequently it happens that a considerable reduction in the number of houses on an area of land will raise the cost of the plot by a mere fraction, even if the same initial value is paid for the land; and, in all cases, the reduction of the number of houses per acre very considerably reduces

the cost of the available land per square yard to the occupier. Moreover, if the number of stories in the building or buildings on the acre be reduced, a given increase of population will require a larger area of land, and so building value will extend over a wider area. It is pretty certain, therefore, that the total effect of limiting the number of houses to the acre, and generally of preventing congestion in residential areas is, paradoxical as it may seem, to secure cheaper land for the occupant and a greater total amount of value for the land owners. If the town planner is to be in a position to secure for a city the efficiency which springs from concentration of commerce and industrial activities, combined with the health, freedom, and general welfare which depend on a sufficient distribution of the population, the community must have the greatest freedom to control and limit the use of land and must not be hampered in the exercise of this power by a prohibitive cost of compensation, by the fear of injustice to the individual land owner, or of financial evils springing from large disturbance of land values.

To make our problem clearer, let us take as an example the case in which the maximum difficulty arises, namely, the reservation of adequate open space. There can be no doubt that in most of our large towns congested urban development has reached an extent beyond which the town should not spread without the reservation of a considerable area of open space. While such open space would not necessarily take the form of a continuous ring (this would depend on the nature of the land and other circumstances) still substantially what is required is a belt of open ground to serve as a breathing space, and to secure recreation and general amenity of conditions. This belt would take just the area of land which has the highest prospective building value, and to condemn this wholesale under a town planning scheme to be reserved as open space without compensation would undoubtedly cause great individual hardships and produce considerable financial disturbance. On the other hand, to purchase it at its present prospective building value would involve the community in a very heavy outlay, and an outlay, moreover, which is not really justified, because the community would be paying for a building value which it does not destroy but merely transfers. The effect of reserving a quarter mile belt of open space around a town would simply be to transfer the prospective building value of this belt to the belt immediately outside it. The

town would continue to grow, but the houses, instead of being built on the first quarter of a mile belt, would be built on the second. The prospective building value of this second belt would rise, not only because the first belt was taken out of the market, but also because the attractiveness of being adjacent to a belt of permanently reserved space would render that land actually more valuable for residential purposes than the land which was taken out of the market.

The problem then before us is this. Can we adopt any method which, without creating undesirable financial complications or inflicting undeserved hardships upon individual property owners, will enable the public properly to control the development of its towns and check the congestion of its urban dwellings?

There would appear to be two methods which would secure the end aimed at.

1. There is the obvious method of purchasing the land around the town. If a city purchases a sufficient area of land all round its borders, it can then control the development; and as it will have purchased some at high building value, some at medium, and other at purely agricultural value, it may proceed to regulate and distribute those values by allotting some land for open spaces, some for agriculture, some for industrial development and other for residential purposes, without reducing in any way the total value; and indeed, it would probably materially increase the total value by the great increase in efficiency for industry and attractiveness for residence which careful planning and distribution would secure. On the other hand, as pointed out above, if the town became stationary and failed to develop further, the community would be saddled with an outlay based on prospective building value which was never realized.

2. There would, however, seem to be a second method of securing the end we aim at. We have seen that we are really dealing with a question of distribution of land values and not with one of their destruction; that wherever the value of some land is reduced by limiting the amount of building allowed upon it, or by its reservation for open spaces or factories, other land will be increased in value to a like amount by having transferred to it the prospective building value that has been removed by the restrictions. Now this increased building value is a new value conferred by the action of the community; it does not form part of the present prospective

value. No financial arrangements have been based upon it; no individual expectation can have included it; it will arise, if it arises, purely by conscious public action which will deprive one piece of land of a certain building value and will confer it upon another piece. Surely it would be in every way expedient and fair that the value thus conferred on the one piece of land should be used to compensate the owner whose land has had value taken from it.

It should not be beyond our power to frame machinery which will enable the community to secure enough of the increment of value which is due to its town planning action to pay the greater part, at any rate, of the compensation which that action entails. I am convinced that this can be done more readily because the increase of value due to town planning will far outweigh any incidental decrease.

COST FACTORS IN HOUSING REFORM

BY CAROL ARONOVICI, PH.D.,

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The whole housing movement of today is to be judged not by the amount of philanthropic work done by individuals, organizations or governmental agencies, but by the return in terms of housing facilities that the rentee or individual builder is able to secure for a given investment. Let us analyze the component parts of this investment with a view to separating the creative from the non-creative, and if possible point out the weaknesses of our present system of financing, planning and building homes.

The cost of land, material, labor, capital and maintenance are the factors which determine the character of the homes that are being built. The relation between the supply and demand for homes, while a potent factor in determining the amount of construction and market price, must in the last analysis be reduced to the question of cost. Let us, therefore, consider cost in its various aspects.

LAND

Land more than any other building factor has a shifting value, aside from its natural value as farm land. It gathers its financial assets, not from any intrinsic qualities, but from its environment. Land values are eminently social products because they represent no labor and depend mainly upon the presence and needs of people for their use. This being the case it is clearly conceivable that those having the greatest share in the creation of the values, the people of the community, should derive the greatest benefits. Land cost, however, is determined by the demand for its use plus the needs of the owner for the cash value. This represents the result of a widespread development of land monopoly by a highly perfected and wholly anti-social system of land speculation which compels the builder to invest in or charge up to land a large and unfair share of the cost of a structure. The share that land claims in the building of homes affects the total amount of capital which it left for planning and building. In other words, in a given total cost of a structure, the

market value of the land determines the investment in the building, thereby affecting the work of buildings and the freedom with which land can be used.

To counteract the influence of land cost, the cities must own land, so that they may fairly compete with the speculator. Zones of building restrictions should be established so as to limit the fluctuation of land values due to social, economic, political or industrial accidents and favoritism and introduce a stability in land values. This will eliminate speculation and return to the honest investor a confidence in the stability of the community which will promote better ideals of home permanency and greater freedom of investment in buildings.

MATERIALS

The statement has frequently been made that in the last two thousand years, except for the introduction of steel, there has been no progress in the invention and use of building materials. So far as I am aware this statement has not been and cannot be denied. The question therefore resolves itself to an examination of the factor determining the availability and cost of standard building materials.

Wood will always be the staple element of building since it is the material that invariably becomes a part of the structure and is an accessory in the making of scaffoldings, forms, etc. The United States is becoming more and more deforested and lumber is yearly increasing in price. Lumber being in many sections of the country the most important building material the cost of construction is being enhanced and the character and size of buildings are therefore being perceptibly affected. This results in a rise in rents and as wages do not as a rule keep pace with rents, housing standards go down.

The advocates of conservation of natural resources are clamoring for laws that would preserve and protect our forests. The builders are complaining against the high price of lumber due to monopoly and a shortage of supply while the tariff interferes with free importation of lumber. The failure to heed the demands of the advocates of conservation and the tariff imposed upon lumber render impossible the cheap building of homes and nullify much of the effort towards conservation. A removal of the tariff on lumber would in comparatively few years allow the development of national resources of lumber and make the United States a strong competitor in the lumber

market of the world. The downward revision of the tariff that went into effect last October contains rates which show a recognition of the need for cheaper building materials and protection of the present undeveloped national resources in this country.

Other building materials, like hollow tile, are subject to tariff restrictions that are making monopoly possible with the unavoidable result of high prices. It is also true that the price of wood due to the scarcity of lumber, monopoly and the tariff contribute to a large extent towards the maintenance of high cost of building materials which may be used instead of wood.

One other important and frequently obnoxious difficulty encountered in the reduction of the cost of building materials is due to the building regulations which are generally prepared by men mainly interested in the reduction of the fire risk and guided by false notions of safety. We tolerate fire and safety regulations and restrictions on one general basis and along lines which apply fairly only to a limited number of buildings located in especially crowded sections of our cities and towns and disregard the larger interests of the community as a whole. In many instances, owing to failure to recognize the value of town planning and the failure to calculate the cost of overcrowding in residential districts, we must pay for the undesirable proximity of our neighbors by an increase in the provisions for safety and protection against fire. Scientific facts giving exact data upon which to base regulations dealing with fire prevention are still wanting and the mass of available legislation is inconsistent with the best interests of the people. Careful investigation of the principles of safety and a critical examination of existing laws will undoubtedly result in the overthrow of many theories which have found expression in increased cost and unnecessary restriction.

On the question of safety our urban laws are very specific and much detailed inspection is required to insure the maintenance of the prescribed standard. The regulations are assumed to be based upon generally accepted standards unflinchingly obeyed by both builder and architect. The surprising fact, however, is to be found in the differences of standards used by the same builders and architects in the unregulated districts as compared with those used in localities under strict regulation and inspection. Were the variance in the standards used by the same men small or insignificant the subject would deserve no discussion here. The facts show, however, that building in suburban and rural districts is made considerably

cheaper than in regulated areas and yet the liberties afforded by the unregulated areas present advantages to the most scrupulous and conscientious builders and architects. The question of the fitness of these regulations for dealing with safety must therefore be raised and answered beyond a question. A margin of safety fixed at a point where it will not place unnecessary burdens upon those who in the end must pay for the structure either in direct investments or in rents, is imperative; it should be based, however, on exact scientific facts and should protect the people in the smaller populational centers with the same zeal that it displays in the larger cities.

One of the most striking examples of what appears to be unnecessary discrimination in the matter of materials of construction, on the question of safety, is the almost general restriction placed upon the use of hollow tile in cities. This material is cheap in itself and saves labor when used in construction. That some defects may be found in a few units is not a sufficient reason for its exclusion from use. With the complicated and costly systems of inspection now in use, coupled with additional specifications of the character of tile to be used, its fitness as a building material could be insured beyond a question.

LABOR

In the discussion of this factor of the economic aspect of housing I wish to remove from the reader's mind the ordinary conception of the word "labor" and define it as the mental and physical processes that enter into the financing, planning, directing and carrying out of the work of land development and construction. This broad definition represents more fairly the actual labor that should be considered from the point of view of the investment. A classification of labor from the above point of view would be as follows:

Non-creative.....	{	Financing Banking Legal service Promotive
Creative.....	{	Directive..... { Engineering Architecture Administrative Governmental
		Executive..... { Skilled labor Unskilled labor

Non-Creative Labor

This classification indicates at least four functions which are distinctly non-creative. They have nothing to do with the ultimate use value of the structure and present processes necessary under the present *laissez-faire* method of providing housing accommodations which tolerate a cumbersome spoils system of speculative building and places large unproductive financial burdens upon the ultimate occupant of a building.

In European countries, especially in France and Germany, banking and insurance laws have placed special restrictions upon the use of banking and insurance funds. These restrictions give to the wage earner and small private builder the opportunity to secure loans from these institutions without paying exacting and unnecessary fees and without creating a host of middlemen's profits that are not creative and hinder rather than develop the opportunities for home building.

Instead of the promoter, whose standard of proper buildings is to be found in the net profits that he derives and the rapidity with which he sells and shifts responsibility, the community should provide every legitimate facility for individual enterprise. This will result in a better character of building because it will have personality and correspond to the needs of the individual families, rather than to a haphazard standard of shifting averages.

It has been said that "The tasteless man has no right to realize his ideas of a house in the presence of a great multitude of his fellow-beings. It is an indecent exposure of his mind, and should not be permitted." If this is true of the individual building for himself, how infinitely more true it is of the man building for others.

Speculative building as applied to the workingmen's homes is one of the most serious housing evils we have, both on account of its lack of architectural character and because of its economic wastefulness due to a free shifting of responsibility from builder to owner. The disorganized method of the speculative builder leads to over-building in certain directions and failure to build in others. This means social waste because of oversupply of certain types of homes and failure to supply others. Speculative building means confusion in the housing market and a consequent social waste resulting from a lack of adjustment between supply and demand. The fact that

only about 17 or 18 per cent of the homes of wage-earners are owned by the occupants, many of which are still carrying mortgages, is very forceful evidence of the futility of speculative building as a means of promoting home ownership. An examination of figures dealing with this aspect of the subject seems to indicate that an average charge of from 25 to 35 per cent of the total cost of a house and land is non-creative investment.

Creative Labor

We have seen that land speculation and non-creative work in connection with promoting building enterprise consume a large although varying share of the investment of the ultimate occupant of the structure. Given a fixed capital to be invested in buildings, most of which are homes, the character of the buildings will be determined by the proportion of this capital that must be invested in non-creative work as compared with the proportion that can be spent in directing and executing the enterprise as well as in the purchase of materials.

The work of governmental control as perceived today, by the restrictive and exacting legislation and inspection, frequently approaches the point of non-creative labor. Governmental work, however, may be made the most potent factor in promoting the interests of proper building and in reducing waste. Among the creative functions that government may and in some instances does perform there might be developed a simplified system of legal formalities in real estate transactions, educational work in the interest of the most economic and most attractive building, the maintenance of information and experimental bureaus on matters of construction, the use of public funds in the promotion of easy financing of wage-earners' homes, the granting of exemptions from taxation of especially desirable buildings below certain values. A more general recognition of these possibilities of governmental work is necessary and unless an organized effort in this direction is made, government in building operations will remain synonymous with restriction, control and limitation of business enterprise. There is no doubt as to this point of view being undemocratic and uneconomical and that it needs a speedy change to the constructive, promotive and creative.

One approaches the subject of executive skilled and unskilled

labor with much hesitancy and the consciousness that the only reduction in the cost of labor can be found in increased efficiency which is indirectly a reduction in cost. Labor unions are an important factor in determining the investment required in the construction of certain buildings. Their wage interests are amply protected by their organizations but unfortunately the standard of efficiency of those connected with labor unions is frequently low and wages are in the end determined by the average efficiency of all rather than by the arbitrary standards of the few. Wages in the building trade are high and they could, with justice to all concerned, be made higher if the general standard of efficiency of the average member of the Building Trades Union were made higher. A scientific standard of efficiency in the building trade established by careful investigation would lead to a saving in the cost of construction and an increase in the average wages in the building trade.

To summarize our statement concerning labor in the broadest sense we may say "that a reduction to a minimum of the non-creative labor, a general recognition of the financial value of architectural planning and administration, a change from a non-creative and restrictive to a creative point of view of governmental functions in building affairs and a rise in the standard of efficiency of the building trades," will meet the needs of the labor problem in the field of building in general and home building in particular. Such a program is consistent with modern tendencies and is based upon concrete and ascertainable facts.

CAPITAL

The financing of building enterprise is justly considered as a very potent factor. We have hinted at the complicated and costly machinery connected with the securing of capital to be used in the construction of buildings when the owner is not prepared to meet immediately the entire cost. The most burdensome expense in the securing and use of capital is to be found, however, in the interest that must be paid for its use. The rates paid vary from $3\frac{1}{2}$ per cent, on very rare occasions, to as high as 8 per cent per year. The ultimate owner or user of the structure must pay this interest which in the end must be charged to the total cost. This being the case first mortgages are seldom paid up by the moderate owner and the

estimate of the meager proportion of families occupying their own homes must be still further reduced if it is to give an accurate conception of absolute ownership. The annals of the struggle of small owners against loss of ownership due to high rates of interest paid upon loans form a sad chapter in the history of thrift. The state and the municipalities have made no move to furnish capital for the building of homes. Insurance companies, banks and financial institutions use local deposits in foreign lands because of the larger returns they bring. To counteract this evil, Germany is now imposing upon insurance companies, saving banks, etc., well defined requirements compelling a minimum per cent of the capital to be used locally and at a fixed rate of interest. The bulk of this local investment is used for housing purposes.

The municipalities and the state can secure money at a low rate of interest which with the addition of the cost of manipulating these public loans could still assist the modest builder to secure necessary capital at a much lower rate than he pays under present conditions. The increased possibility for securing such funds would reduce the non-creative investment and would afford the community taxable values that are being retarded because of the lack or high cost of capital.

In connection with the securing of capital it should also be added that the obnoxious practice of many banks and loan associations of lending money only upon completed or almost completed building places the investor at the mercy of the speculative builder who builds for the market without individuality, and without regard to durability or fitness to environment.

MAINTENANCE

It is a well known fact that the difference in the cost of construction between the present day temporary building and the higher type of permanent construction is much below the difference in the actual return on the investment when quality and length of service are considered.

If a house, because of its solid construction, yields a continuous return for fifty years with a small maintenance cost and a flimsy structure yields a continuous return for twenty years with a high maintenance cost, it is clear which is preferable as far as the individ-

ual investor is concerned as well as from the point of view of the community as a whole. In the construction of buildings, however, immediate needs seem to be paramount and the maintenance cost is wholly overlooked. A clear vision of the economic relationship between maintenance cost and length of service as related to initial investment is still wanting.

With the savings made possible by a scientific adjustment of the relationship between the various elements of cost, and the elimination of non-creative charges, greater durability could be secured. The saving in the natural resources would have its effect upon the price of materials and a greater freedom in the use of durable elements would result.

An element of maintenance cost that has received considerable attention in recent years and which is slowly making itself felt among thinking men is taxation of land values and improvements. We cannot here enter into a detailed discussion of the principles of taxation and the best methods to be adopted. A tax reform movement that inspires confidence is now finding expression throughout the country and a solution is bound to come within a generation. We cannot refrain, however, from mentioning that monstrous system of double taxation which places a tax upon full values of mortgaged property and upon the mortgages themselves. By this system the man who is poor and must borrow in order to obtain a home is fined for his poverty.

In the foregoing pages we have outlined briefly the main factors of cost and have endeavored to point out the relation between creative and non-creative labor and investment.

The housing problem has been variously defined as one of land values and land use, or as a question of credit and loans, transportation, congestion and birth rates. All these are unquestionably important factors in controlling the housing situation throughout the world. Fundamentally, however, it is determined by the relation that exists between creative and non-creative work in the home building industry. Eliminate waste and center the largest possible share of the investment in the creative elements of the building and the housing problem will be solved both economically and esthetically.

TAXATION OF REAL ESTATE VALUES AND ITS EFFECT ON HOUSING

BY DELOS F. WILCOX, PH.D.,

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The single-taxers maintain that if all public revenues were raised by a tax upon the rental value of land, excluding improvements, the effect would be to stimulate building by forcing unoccupied land, favorably situated, into its most profitable use. They say that the single tax would put an end to the holding of vacant land for speculative increases in value, as no one could afford to pay a heavy tax on land from which he was getting no revenue, especially as the tax would increase from year to year with the appreciation of the site value of the land, and wholly irrespective of the owner's expenditures for improvements.

It appears that, if this theory is correct, the single-tax on land values would result in the building of a compact city around the business center in every case where the topography would permit nearness to constitute desirability of location. Inasmuch, however, as there are few city sites where nearness to the business center is the only element to be considered in determining desirability, the expected result of the single-tax upon city building may be more accurately stated as the development of a compact city along the topographical lines of least resistance around the business center. In other words, the city would be compact in its various parts, though it would not be symmetrical unless topography invited symmetry.

It is obvious that any force tending to close the open spaces and make a city compactly built must have a fundamental effect on housing. Apparently, the adoption of the single-tax would throw upon the community as an organized unit of self-government the entire responsibility for the reservation of open spaces for all purposes. The natural tendency, so far as the private holder of land was concerned, would be to build as intensively as possible on the site controlled by him. Without a city plan and governmental intervention, this would mean high buildings, buildings covering the entire ground space, no parks or open squares and streets narrowed

down toward the vanishing point. Obviously, these tendencies, if unchecked, would bring about the worst possible housing conditions.

It is urged, however, that these tendencies toward congestion would be checked by competition in building. Over-improvement would tend to destroy, or at least diminish, natural site values and bring into use sites farther out from the business center or otherwise less favorably situated. Thus the single-tax policy, unaccompanied by public regulation, would invite what from the housing standpoint must be considered bad building, but lots of it, and so everybody could have a big house, but it would be a poor one. A man's home would be all inside and no outside. There would doubtless be some reaction in favor of better houses and the restoration of rental values destroyed by over-improvement, but this reaction would have the usual force of hindsight. Houses are used as they are built, especially in large urban communities, and it takes a very considerable amount of hindsight to correct a mistake in building which a very little foresight would have prevented. In other words, it is true in housing as in other matters, that an ounce of prevention is worth a pound of cure.

It will take something more than taxation to handle the housing problem. This should not be considered as an adverse criticism upon the single-tax program, because, so far as the writer knows, no responsible single-taxer would for a moment urge the adoption of his tax plan without governmental regulation to supplement it. In fact, under any conceivable system of taxation, some sort of a city plan and some scheme of direct limitation upon or regulation of private activity in the improvement of land are necessary. Even in the heedless times during which American cities have been born and "come up," there has always been some city planning. The poor child has always had some clothes and has received from time to time at least a few educational cuffs. But with the proposed adoption of the single tax as a social program, necessarily goes a comprehensive scheme of city planning and community regulation. This much may be taken for granted.

It should not be forgotten that taxation is only one of many factors in the housing problem. In this discussion we are trying to isolate this one factor and study its results. The logical effects we discover in a theoretical discussion are likely to turn out to be mere tendencies and, in actual practice may, indeed, disappear from view.

entirely, having been overcome or neutralized by other tendencies arising from other factors of the problem. With this point in view, perhaps we may safely say that the tendency of the single tax on land values as a separate factor in the problem under discussion would be to increase the quantity of available housing but to make its quality in relation to the outdoor world worse.

The tendency of the single-tax to affect housing doubtless would vary with the relative quantity of the tax. If only a small portion of the rental value of land were to be taken in taxes, the effect would be relatively slight, while the taking of the entire rental value in taxation would accentuate to the utmost the tendency described.

Certain approximations of the single-tax are now being urged in various quarters, either for the purpose of increasing public revenues or as part of a program of civic improvement or of economic justice. Their advocates sometimes claim for them marked effects upon the housing problem. In particular, a campaign is now being carried on in New York City for the halving of the tax rate on buildings. The scheme is gradually to reduce the rate on improvements until it is only half the rate on land values. It is obvious that unless public revenues are to be reduced the process of pushing down the tax rate on buildings will automatically result in the raising of the rate on land values. While the proposition now pending in New York looks no further than the relative halving of the rate on buildings, it would appear that the logical outcome would be the ultimate exemption of buildings from all taxation whatever. This scheme, if carried to its logical end, differs from the single-tax only in that it does not forbid the raising of revenue by other means than the tax on real estate.

In this New York campaign for tax reform great emphasis is being laid upon the alleged social benefits that would accrue from the reduction of the tax rate on buildings. Specifically, it is claimed that it would result in the lowering of rents. This would be brought about by the stimulation of new construction. It is estimated that about twenty million dollars a year would be shifted directly from the backs of the tenants to the backs of the landlords, and the enthusiastic advocates of the scheme allege that this sum of twenty millions is only a fraction of the total financial benefit to accrue to the working class if the scheme is carried out. Evidently, if the results anticipated by the advocates of the scheme are really to be expected, the

tendencies of the plan would be the same as those of the single-tax except for differences in degree. Anything that reduces rents affects housing directly or indirectly. Either the quantity of available housing is increased or the financial ability of the tenants to demand better housing is raised.

In this connection it is to be noted that a house is rather inelastic. If the number of houses or apartments relative to the number of families needing them is increased, rents will be lowered by the competition of vacant apartments for tenants. Except in relatively few cases, two or more families do not live together in a single house or apartment in order to dodge the effects of high rents, and in still fewer cases would a single family spread out to occupy more than one house or apartment as a result of lower rents. As a general rule, a house or apartment continues as it is built, and, if occupied at all, is occupied by a single family group, whether rents are high or low. The chief exception to this rule is in the taking of boarders, who in most cases are single men or women and would not occupy houses or apartments by themselves anyway.

The process of readjusting and enlarging existing apartments to suit the expanded tastes and financial abilities of tenants is difficult, expensive and slow. If a family in a crowded city desires and can afford better quarters, the usual process is for the family to move out and find other quarters originally constructed on a more liberal scale. This moving out, whether a cause of lower rents in the abandoned location or a result of better accommodations for the same or lower rents in the new location, does not change the house or apartment from which the family moves. It simply leaves a social cell vacant. It does not improve the cell, or give the families occupying the neighboring cells any more room or any better accommodations, within their homes. Of course the yards, the streets and the neighboring parks and playgrounds are less crowded.

If there were no influx or increase of population to occupy the vacant places, there would be not only an immediate lowering of rents as a result of competition for tenants, but also a gradual readjustment or reconstruction that would ultimately eliminate the surplus apartments. This readjustment would necessarily be slow because of its expensiveness. Naturally, an owner will accept lower rents for quite a while before going to the expense of rebuilding the house. Indeed, the immediate effect of lower rents and decreasing

values in many cases will be a curtailment of improvements. A landlord, though urged by competition to improve his houses in order to hold his tenants, will also be urged not to improve them where values are falling and the prospects of future profits are not bright.

A close consideration of the scheme for reducing the tax rate on buildings as proposed in New York shows a probable effect much less important than is anticipated by its advocates. From the preceding discussion it is clear that if rents are lowered through the competition of vacant apartments, the inevitable result will be a shrinkage in the value of the land. The houses will not be worth less. If anything, they will be worth more, for the stimulation of building will naturally result in a greater absolute or relative scarcity of building materials and consequent higher prices. And so land values will be diminished while building values are increased. While so great a change in relative values as completely to offset the change in the relative rates in taxation does not seem probable, the tendency undoubtedly would be in that direction. This fact calls attention to a certain flaw in the scheme that would tend to make its results disappointing from the standpoint of its hopeful supporters. If the plan were to limit the relative amount of taxes to be levied on buildings as compared with land values rather than the relative rate of taxation, the forecast of results would be much more dependable.

In any case, as with the single-tax itself, satisfactory results from the housing standpoint cannot be expected, unless the tax scheme is supplemented by a comprehensive city plan and drastic public regulation of housing construction.

Another approximation of the single tax sometimes advocated is the extra tax on future increments of land values. This scheme is brought forward as supplying an additional source of revenue and is justified by its advocates by the usual arguments advanced by single-taxers and admitted by many as sound under ideal conditions but impracticable in the presence of existing vested interests in land values. While an additional rate of taxation as applied to future increases in land values, if the addition were considerable, would doubtless tend to check land speculation and mildly stimulate the profitable use of land, its effect upon housing would not be different in kind and would probably be less in degree than the effect of the taxation schemes already considered. An increment tax that would

take a part of the increase in land values in a lump sum either at stated intervals or as an incident to the transfer of title to the land would be like a special assessment for benefits, except that no question would be raised or proof required as to the source or cause of the increase in value. It is reasonable to believe that special assessments, if levied without reference to improvements on the land benefited, do, and that the kind of an increment tax just described would, tend to curtail land speculation and encourage building.

If we turn to the other extreme, and ask what the effect of the exemption of land values from taxation and the levying of a heavy tax on buildings would be, it is reasonably clear that building would be discouraged. If the building tax were levied on values, every effort would be made by builders to curtail cost and postpone or entirely avoid improvements. The quantity of housing might not be so much affected as its quality. The type of congestion encouraged, by such a scheme of taxation, would not be the New York, tall-tenement type, but a squalid low-house type more like that prevailing in London. It is clear that such a plan of taxation would be effective in preventing the intensive improvement of land. It would be a sort of automatic check upon the height and cost of buildings. The only kind of city planning that would be effective, so far as housing is concerned, under such conditions, would take the form of direct governmental or philanthropic investments in model tenements. Private enterprise would need to be supplemented and stimulated, instead of being repressed and regulated. But, at least so far as America is concerned, this phase of the discussion is quite academic, as no one proposes an increase in the rate or amount of taxation on buildings as compared with land itself.

We must still consider the housing effects of the real estate tax as commonly known in American cities. While we have had ample experience with this tax, the discussion of its effects is more or less speculative, because we have always had it and have never had much else to compare it with. If a single tax on land would encourage building and a single-tax on improvements would discourage building, what are we to say as to the effect of a tax that falls equally on both? Assuming that the assessors arrive at the same percentage of true value in assessing both land and buildings, a uniform tax rate on all real estate would apparently neutralize the effect of the building tax and the land tax so far as housing is concerned. Indeed it

is hard to see how variations in the rate of taxation, from low taxes to high taxes, so long as the rate applies equally to land and building values, assessed equitably, can have much direct effect upon either the quantity or the quality of housing relative to the population of a given community. High taxes, if they mean extravagance and waste, or low taxes, if they mean neglect and stagnation, may check the growth of a city. It may be so expensive or so inconvenient to live or do business there that population and industries will not come into being or will go elsewhere. It may be that taxes equitably levied and wisely spent will increase the prosperity of a city by improving the condition of its citizens or by attracting additional population, or by both. If the condition of the people is improved the quality of their housing will gradually improve to meet the effective demand. If the number of the people is increased the quantity of housing will increase. If the condition of the people is improved, and their number increased, the quality of housing will improve and its quantity increase. If the condition of the people grows worse while their number increases, there will be poorer housing but more of it in total quantity.

In conclusion, it appears to the writer that desirable housing reform cannot be brought about by new schemes of taxation alone. Taxation of land values may be used to stimulate, within certain limits, the building of houses, but whether this stimulation will have good or bad results will depend on the wisdom and effectiveness of city planning and direct and indirect community regulation. It may be possible to make a horse go by striking him with a whip, but unless you have something for him to pull, a place for him to pull it to and some way of guiding him, what is the use of laying on the gad?

THE RELIGIOUS VALUE OF PROPER HOUSING

BY WILLIAM B. PATTERSON,

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Philadelphia.

In days long past the instruments and agencies of mortality were few and simple. Cain used a bludgeon. That act of murder was raw, and crude, and brutal—utterly inartistic. Then Cain built a city—the first city. And as civilization has increased, as the city has grown, and as our social cruelties have become more refined, so also have our instruments of death and destruction partaken of these elements of “progress.” Hence, we have in the city the slum and the tenement.

Cain, the murderer, left no record of having originated the tenement. This, perhaps, was due to his lack of refinement in the gentle art of taking human life. He did not, therefore, project his murderous mania into the city conditions that were to come with the growth of civilization, preferring to leave to the ingenuity of his descendants the invention of newer and more effective death-dealing methods. Therefore, it has remained for those of later days, and especially for those of America, to invent the tenement. And, very properly, it was located in the city. Thus we find that the city, originally devised by one whose hands were stained with the blood of his brother, produces one of the modern instruments of death; and strange as it may seem, it is only within recent years that our perception has enabled us to place the noisome tenement on the same deadly plane with the bludgeon and the poisoned dagger. After all, the chief difference between the bludgeon of Cain and our tenement house is that while the bludgeon murders without the law, our tenement house kills within the law.

When the Federal Council of the Churches of Christ in America, composed of official representatives of thirty-two religious denominations, formulated an initial social creed in Philadelphia, in December, 1908, it was not quite able (seemingly) to apprehend the religious importance of proper housing; but when the same Federal Council met in Chicago four years later and revised its social pro-

nouncement, a significant advance in the thought of the churches was registered, in that the revised creed featured proper housing as a definite aim of religious effort.

As a matter of plain fact, it is becoming increasingly clear that the author of the decalogue and of the sanitary code is one and the same God. Perceiving this, the religious bodies of America are beginning to manifest a keener appreciation of the necessity of proper housing.

The aim of all true religion is the establishment of the kingdom of God, the coming of which is the great comprehensive ideal of the church. This kingdom we believe to be not only an individual good but also a social state. The ideal city which is to be ushered in with this final consummation is typified in the New Jerusalem—a holy city, a spacious city; and in the blueprints which we have of this city of the kingdom of God we locate its very antithesis of the city which obtains in all parts of the world today.

In the description of the New Jerusalem is no suggestion whatsoever of crowded quarters, of the congestion of peoples, or of insanitation. This city "lieth four-square"—which term must be taken to mean that it is perfect throughout in all of its dimensions. In contrast, we have the American city, the English city and the continental city, each with its herding and massing of human beings, with its enormous death-rate in the congested sections, and its rapidly multiplying processes that make for delinquency, degeneracy, defectiveness, disease and death; and which sinister slants and tendencies project themselves into the generations to come.

And as for the dimensions of the shambles in which, catacomb-like, our poverty is massed, they are as far from the "four-square" ideal of the city of John's vision as the East is from the West. Witness the dimensions of the American tenement house in our large cities: breadth 25 feet, depth 50 to 60 feet, height 50 to 75 feet, with an air-shaft which is generally a well of foul and stagnant air, about 3 feet in diameter. There is still a fourth dimension to the American tenement, which Dr. Walter Laidlaw terms "dividends." One would not be far wrong in saying that this known fourth dimension is by all means the most important. Eliminate it and the problem of the tenement house is just about solved.

The housing problem is inextricably interwoven with the problem of the home and the family, and for this reason, at least, it

must continue to be more and more an object of religious concern. The tenement house is an impediment to God's plan for the home, and no matter to what high degree of physical healthfulness we may raise the tenement, this basic fact will remain. The ideal home can by no stretch of the imagination be located in a tenement, and we would do well if we were to put less emphasis upon the matter of building "model" tenements, and more emphasis upon the necessity of single houses for single families, in order that the home may be preserved.

Dwight L. Moody said of England that it was more in need of homes than of churches. This statement is with equal fitness applicable to all of our American cities; for the situation which there obtains involves a surplus of churches, practically all of which are under-worked, and an appalling deficit of homes.

It is true that the tenement house is a growth which is due to the complexity evolved by our changing social and industrial conditions, and by the great influx of people to the cities. It is true, moreover, that slum conditions which root in improper housing, are to be found in the smaller towns, and even in the country districts as well as in the large cities; but in these former places the slum is an anomaly, whereas, in the great city it is the result of our sweaty haste and heedless commercialism.

True as this is, yet it is equally true that in most of our dealings with the gigantic problem of housing we have been too content to apply remedies and palliatives and correctives, too often without thought of the standards which should actuate our efforts. Witness the history of the first "model" dwelling in the United States, located in New York City, in 1855, by the Workingmen's Home Association, which "model" dwelling soon became one of the worst tenements in the city.

I cannot refrain from drawing attention here to the momentous fact that we are today passing from the old to the new philanthropy. It was the old philanthropy which inspired us to build hospitals and sanatoria, and to load great ships with provisions, and clothing and medical supplies, and send them to the relief of famine-stricken peoples at the other end of the world. So the old philanthropy laid emphasis upon cure, remedy, alleviation. In other words it dealt primarily with effects.

The new philanthropy, while not minimizing in any degree the

utter importance and necessity of hospitals and sanatoria, finds its chief business, however, in its searching for and treatment of causes. It would abolish plagues and epidemics by conforming to the laws of health and sanitation; by giving pure food, pure milk, pure water, healthful homes, and there is a very real sense in which the American and British trained engineer is of vastly more importance to the famine and plague stricken spots than the supplies of the relief ship and the ministries of the physician.

Tuberculosis, meningitis, rheumatism, diphtheria, and the entire train of diseases which play havoc periodically in the congested sections of the great cities—all must be treated. But the new philanthropy discovers in prophylaxis a far more valuable principle and a vastly more important asset than is to be found in therapeutics. In 1912, sickness among the people of the United States cost more than \$700,000,000. During 1912, \$19,000,000 was spent in anti-tuberculosis campaigns. Of this latter sum it is conservatively estimated that less than \$500,000 was spent for preventive work. The question here suggests itself as to what results would have issued if the new philanthropy, which strikes at causes but which does not ignore symptoms, had been able to guide the expenditure of these vast sums of money.

We must face the fact that bad housing and tuberculosis bear the relation to each other of cause and effect; therefore, if we would annihilate this scourge we must, in the first instance, utterly annihilate the breeding spots of the white plague. In permanent net results there is not, to my mind, any question whatsoever but that \$18,500,000 spent in the work of abolishing the causes of tuberculosis would be of infinitely more benefit than the same amount spent in the building of hospitals and sanatoria, which is not to say that these curative agencies are unnecessary.

We have surely progressed beyond the point of some people who dwelt at the base of the cliff, and who were divided into two factions: one declaring that the way to put an end to the mortality that resulted from people falling over the cliff was to place about its edge a strong, durable fence; the other faction contending that the end would better be served by the establishment of a modern ambulance corps at the cliff's base. We face this identical proposition when we take hold of the housing problem,—it matters not from which angle we approach it.

If we are to prevent immorality, crime, disease and premature death, it is for us to blast at the roots of these ills in the social body, and if we are agreed that the tenement house, with its swarms of heterogeneous peoples, and its promiscuity of living conditions, is the prolific breeder of these ills, then it must follow that the tenement, as we know it today, must go. Not until we have apprehended the home and gained a knowledge of the tremendously important part which it has played in history, will we be able to realize the far-reaching significance of the movement for proper housing.

The history of Israel is the history of the family, and throughout the Old Testament the emphasis is on the family descent and continuity. The genealogical record in the book of Genesis and elsewhere; the genealogy of Christ with which Matthew begins his gospel—all these attest the high value which was placed upon the home and the family by those of the early days.

The ancient Jews made ample provision for the home, realizing that what the home is the child will be. The family, home and household—all figure prominently in the ministry of Christ; indeed, primitive Christianity began in the home, and through the home and the family was it propagated. In this respect may we inquire as to the chances of success which Christianity would have had if for the home in the early days had been substituted the tenement house of our day? What chance has God in the average tenement in the congested sections of our American cities? Would not the "family altar" be a travesty under tenement house conditions? Does not even common morality fail to procure more than a precarious lodgment?

Dr. Josiah Strong states:

The Bible knows nothing of the philosophy of evolution as a philosophy, but is full of illustrations of its truths because it is full of references to nature and human life. The individual, the soul, the nation, the church, are all presented as growths needing a favorable soil, the right nurture, the care of the vine-dresser, or the gardener. The parable of the sower and the seed as told in the Gospels brings out especially the nature and truth of environment. The seed which the sower plants is always the same, but its results depend upon the nature of the soil, whether it be stony ground, or by the wayside, among the thorns, or in good soil.

If plant life needs proper soil for its development does not child life likewise require proper environment for its growth and expansion?

sion? Will not children growing up with little family life, create homes with less? Important as is physical environment, yet more so is the moral and intellectual setting of a life.

The home today as well as the family, is disintegrating. The pressure of social, industrial and economic forces, coupled with the tendency of people to congregate in the large cities, and of still more people—namely, the immigrants—to colonize, for the most part in the older sections of the cities—all make for an undermining of the home and the decadence of family life.

Of what sinister significance is the testimony adduced from a woman worker among the tenements who appeared before a New York commission and said that, in her opinion, the greatest social evil was not direct prostitution, but "accidental prostitution," indicating that thousands of children are reared where purity is impossible? Investigations by vice commissions from now to the crack of doom could not yield a more scathing indictment against society than this simple statement of a social worker who spoke from first-hand knowledge of the facts.

What type of citizenship will issue from the tenements where living conditions invariably make for what has been termed "hugger-mugger promiscuousness?" If the home life is not conducive to health, comfort, decency and morality, and safety of life and limb—and assuredly it is not, under tenement house conditions—then are not we of this generation, by our very dallying with this phase of the housing problem, by our dealing with palliatives, amelioratives and remedies, are we not consenting to the enlargement and the aggravation of the problem with the sure expectation of bequeathing it as an unholy heritage to the generations to come?

Karl Marx said of the Anglican Church that it "would rather lose the thirty-nine articles than one-thirty-ninth of its income." To make this serious charge against one communion is obviously unfair, because in the realm of business, and especially that business which has not yet begun its approach to regeneration, the church creeds, Christian principles and religious perceptions are ignored if not forgotten; and the type of *soi-disant* Christian, who profits through the shame, degradation, vice and crime of those who are compelled to occupy his death-dealing tenements, is he whose brain is divided as is the hull of an ocean liner, into separate, distinct, non-communicating compartments. In one he keeps his business, in another his

politics, in another his domestic affairs, in another his so-called social life and in still another that which he is pleased to term his "religion." And it is quite often the cowardly boast of this type of "Christian" that he does not permit his "religion" to enter into his politics or his business.

Happily this type is becoming lyterian. The chief lesson of the recent men and religion movement, the salient feature of all its campaigns throughout the United States, was in the unequivocal pronouncement that unless a man was Christian in all of his relations in life, and unless his religion dominated all of his actions, such man could not possibly be Christian in any of his relations.

In his story, *The Mansion*, Dr. Henry Van Dyke, makes clear as crystal the incontrovertible fact that the man who extorts, even with the sanction of the law, high rentals, and big dividends from the lowly dwellers in noxious tenements on earth thus elects himself to a poor "abiding place in the Father's house of many mansions." And the advanced thought of the church today goes even beyond this point, for does it not vision the assembling, before the bar of infinite justice, on an indictment of murder, of all who are guilty of profiting at the expense, and thus conniving in the debauchery, degradation and death of those men and women whose dull, leaden lives were lived in the tenements?

THE WORKINGMAN'S HOME AND ITS ARCHITECTURAL PROBLEMS

By FRANK A. BOURNE,
Architect, Boston.

A cottage and a garden, home and family as the day's work ends, are the ideal of happiness for many a man, one of the bulwarks of the town and nation, and the ultimate goal of the housing problem.

In America one of the earliest typical houses was the "Cape Cod Cottage," built around a single chimney with one or two sleeping rooms on the ground floor for the benefit of the mother who generally did the cooking as well as cared for the children. A century later on the other side of the continent a similar house has developed known as the California bungalow. This type has spread across the country and now stands side by side with its colonial ancestor on the Atlantic coast. Similar one-story houses are being built to solve the low-rent demand in Germany and Austria. In Budapest a shoemaker stopped the work he was engaged in with the help of his family in his little glazed-in porch, to show me the three living and sleeping rooms all on the first floor and the unfinished second floor or attic in which the family wash was drying. In England similar accommodations are generally provided in two finished stories. It should be noted that all these foreign examples have incombustible outside walls. The portable house capable of extension as the family grows, a development in America of the last three years, will fill, in some localities, the requirements of single-story inexpensive houses.

The cheapest type of single house is the "story-and-a-half" with its chamber walls and plate about 4 feet above the second floor level. From this point the ceiling follows the slope of the roof until the 8-foot horizontal ceiling is reached. Examples of this may be seen in the manufacturing centers, such as Lynn, Mass., or Erie, Pa.

The two-story house with square, level ceilings on the second floor, is but little more expensive, but the tendency is then to raise the roof and finish rooms in the attic which makes the building too expensive for consideration as a type.

For two families, however, this two-story and attic type has certain advantages, and the "two-family house" is a familiar though rarely a beautiful object. Two front doors are customary, one leading directly to the second floor, and under usual building laws, two staircases are required for fire-protection, giving front and back stairs so that the family on the first story has access to one room in the attic, and the second story dweller has his separate cellar and heater as well as a room in the attic, all separate except in the matter of sound. An advantage urged by the builders and sellers of these residences is that a man may own the whole of the house and control it, and pay the running expenses by the rent of the other apartment.

The frame apartment house, for three or more families, particularly the "three-decker," is in disrepute and forbidden by many building laws. If it is semi-fireproof, with brick or fireproof walls, there is not the same objection, provided there is sufficient light and air, and the area between fire-walls is not too great.

Double or multiple houses, where each family controls all the space between earth and heaven within its party or lot lines, give an individuality only equaled by the single family dwellings, and preferable to those that are small and crowded. The family in a block is more isolated from its neighbor than the family in a single house where the windows often look into the next house almost within hand-shaking distance, 6 or 10 feet away.

Many workmen are obliged to occupy houses that have descended from some high estate, and it is difficult to find such houses that have been altered so that the sanitary conditions are tolerable. The problem of alterations is peculiar to cities, and the more careful the original city-planning, the less danger will there be of such change in districts. The purpose should be to keep residence districts of a certain class the same and prevent the turning of the tide of the population which lowers real estate values, as at present. All this is an economic loss that brings the necessity of making alterations, an ever-present architectural problem too often not solved by architects or sanitarians.

The "quadruple" house has been developed in Germany, notably at Leverkusen, and has lately been introduced into the United States. Illustrations of this may be found in the *Architectural Record*, New York, July, 1913. It is a square building consisting of

four houses, one on each corner, each with its separate entrance and yard. Each has three stories, the third being in the roof, and the effect is that of a good-sized single house. Aside from the unfavorable north or northwest exposure that one of the families must have, the arrangement seems to be very practical and economical; it is also good architecturally as it introduces larger units.

In regard to the relationship between attractiveness and cost, we cannot expect beauty from shoddiness. The speculator, the shyster architect or no architect, and the jerry-builder go hand in hand. The builder, brought up on a half century of gingerbread decoration, regards everything in that line as extra expense, and coupled with the customary extra supervision is apt to be timid and to give a high estimate if an architect is employed. The architect too is often disinclined to get down to the simplest details of construction, and even if he works out simple details, finds it difficult to change the custom of builders without causing greater instead of less expense.

Grouping adds to the effectiveness of houses if they are sufficiently near to merge the sky-line. One of the greatest objections to the appearance of our modern towns is their aimless irregularity. The irregular old German towns were picturesque. Take, for example, Rothenburg, Dinkelsbuehl, Buttstedt. But notice that they were not aimless in their arrangement, and in detail they are delightful.

Houses nearly alike and placed in rows, may be attractive, if they are evidently well suited to their purpose, and individually interesting. The houses of this class erected by the London County Council at Norbury, are much more attractive than speculators' rows on adjacent streets.

There is opportunity for economy in the arrangement of the staircase. The "huehner-treppe" or "hen-house steps" in the new Garden City houses at Hellerau, near Dresden, Germany, are excellent examples of stairways that are large enough, though small and steep. There is little satisfaction in a common-place stairway, that is not gradual enough in its ascent to be an easy and ornamental addition to the house, nor steep enough to be economical of space and quick to climb.

In discussing the architectural attractiveness of workingmen's homes, it must not be forgotten that they should be attractive to the people who are to occupy them. When Denry had succeeded

in life and built a house with "all the modern improvements," he was unable to get his mother to live in it, as she preferred the old house on the old street with all its antiquated but familiar inconveniences. It has been found difficult to get people to move from slums to suburbs; there seems to be an appeal in the big busy brick buildings that the country cottage or suburban garden does not satisfy. Indeed there is no accounting for tastes and we must acknowledge that we really do not know what is best for us. There is always the lurking desire to ape one's betters, without acknowledging that they are better, that makes the requirements that we are willing to pay for quite different from our needs. A family must have a parlor, dining-room, sitting-room and kitchen, infinitesimal in size, when a good living-kitchen would be better and cheaper. It is largely a question of popular education as well as of architecture and the line of demarcation is not clear. The problem is not sufficiently definite when it is handed to the architect and he finds fault with requests for three rooms when he feels that one will answer.

Into the servant question we happily do not need to enter, for the workingman's home is also a working woman's home into which the servant does not and should not enter. Now if this situation can be made a matter of pride for the working family and the kitchen made the best room in the house, like the old New England farmhouse kitchen, or the living-room where the cooking is done in the little houses of England and Germany, is not a great cut immediately made in the cost of the house as well as in the cost of living in it?

In Frankfurt I was shown into a sunny living-room; the built-in range, neat and suggestive of home, gave sufficient heat for warmth as well as for cooking the food. It was only a step for the mother to put the food before three children in the dining alcove. It compared favorably with our tiny northwest kitchens and two double-swinging step-delaying doors that our American servantless mothers have to endure. What was a pleasure to the German in the company of her children, is with our American arrangement, drudgery.

As to essentials and non-essentials, where is the line to be drawn? The landlord must let the house, and the house will not let without certain features that are not essential, and there seems to be no grade of poverty so low where a house with certain non-essentials will not be taken in preference to more modern and sanitary accommodations but restricted to simple necessities.

The writer aided and abetted the changing of an old mansion in a degenerating suburb of Boston, into a three-apartment house. The appropriation was limited and it developed in discussion with the real estate agent, that while it was essential to have a "bath-room" in the apartment that the tenant could talk about to her friends, it made no difference whether or not a bath-tub was installed so long as space for it was there. Therefore in the interest of "economy" and "requirements of tenants" the bath-tubs were omitted from the contract and tenants moved in before the contractors were through and out of the house.

Beyond such requirements as a good roof and an outer window in every room, it is possible to state certain essentials:

1. A living-room or living-kitchen in which the most of the family work is done and where the meals are cooked and served.
2. A wash-room or scullery.
3. Three sleeping-rooms, more or less.
4. A toilet or bath-room.
5. A cellar or shed.

If the sleeping-rooms and bath are on the second floor, there will be space enough for a parlor or a porch on the first story and these are generally included even in low-cost houses. If the parlor can be shut off, it can be used as a sleeping-room.

Just what is the "irreducible minimum" for the workman's living-room? Can the combination sink and laundry-tub with wooden cover stand in the room with the gas stove and the dining table, as they do in the Charlesbank homes, Boston? Or shall the sink be placed in a separate wash-room or scullery? If in the living room, is it possible for aspiring workmen's wives to conceal them by a screen —the only "non-imitation furnishing" of the bachelor girl's room?

A novel recently published in Boston, tells the story of how "A middle-class New Englander emigrates to America" and finds "one way out" of his over-burdening clerk's life and suburban house with its false standards, through the simpler life of a four-room flat in the Italian quarter of his own city. By sloughing off an unnecessary style beyond his means, he was able to find the essentials of healthy, happy living, and in the end better though less expensive living conditions than before. What we need is the "intensive cultivation" of houses making it possible for one family to obtain living space where two did before with more favorable conditions and no increase in rental.

The subject of housing is calculated to give anyone a sense of great weariness and visions of dry statistics. What is wanted, in a word, is to give every family a home, and the architect's problem is to give the proper place for that home. The problem is not entirely the architect's; it is to a large extent educational. The demand for simple homes must be created. There must be some restriction in the occupants per room, demanded as much by decency as by the housing law. Too much deference, on the other hand, must not be paid to the demand for many separate rooms, for a parlor, when sleeping rooms are needed and a larger, lighter, airier living-room. Yet in planning group houses it is possible to arrange some houses with parlors in order to keep the younger members of the family in the evenings off of the streets. Under these conditions the parlor may be considered a necessity, but if it becomes merely a rarely used stiff front-room, with the best light in the house, it is a mistake.

In the servantless house how wasteful it is to have to cook too far from the dining table. It is stated that not more than 10 per cent of the families have servants; it would seem that out of the remaining 90 per cent a few would be willing to live in houses designed for families that were willing to acknowledge that they did not have servants and never expected to have them. For such a family the living-room or living-kitchen would immediately become the largest, sunniest, most pleasant room in the house, with a small wash-room near by, where the cooking is done in the living-room and the same range that cooks the food heats the house, or else the small pantry-kitchen can be developed where a gas stove is used, close by the living-room.

The architect's problem for a cottage or for small city flats, is not to take any conventional plan and try to put a pretty exterior around it, but rather to develop a compact, adaptable, economical plan suited to the essential requirements of the average family, and then to express this plan without meaningless ornament in the exterior design. The most attractive small buildings we know of are the English laborers' cottages. These are attractive because they are the simplest possible expression of the workman's needs, small in scale, of permanent materials that grow more and more picturesque with time.

Can we not get a little of this simple but satisfying character into our smaller homes?

CAN LAND BE OVERLOADED?

HOW LITTLE LAND DO PEOPLE NEED TO LIVE ON?

BY BENJAMIN C. MARSH,
Secretary, New York Congestion Committee.

The mere raising of the question as to what constitutes overloading of the land, raises at the same time the question, when, where and why we have become so short of land that we have to justify, or even to condone, the massing of 500, 750, 1,000, or more people to the acre, for living purposes. Various advantages are alleged for warehousing people in this way. Among others, that it is conducive to sociability, makes coöperative housekeeping, with its manifold benefits, easier, and reduces rent, and the cost of government. An examination of these claims hardly justifies ascribing to these alleged advantages sufficient importance to offset the accompanying and inevitable disadvantages.

It is true that a crowded four or six-story tenement population has all the advantages of propinquity. But propinquity in and of itself does not constitute sociability. It is quite apt indeed to engender irritability, unless there are other factors more potent than mere propinquity to offset it. A sarcastic wit remarked, "God gave us our relatives, but thank God we can choose our friends." This is assigning larger responsibility to the original creator, and a sort of direct action, usually considered to be the exclusive prerogative of the Industrial Workers of the World, and kindred organs of protest.

It is a novel statistical incursion—or shall we call it intrusion—into the realm of psychology, to claim that sociability increases in proportion to the number of people living on the acre. It is doubtless a soothing sentiment to the beneficiaries of capitalized congestion land values. Their formula is so logical and convincing. "If sociability with 250 to the acre equals x , then sociability with 1,250 to the acre equals $5x$."

Unfortunately, however, for the proponents of the propinquity sociability theory the Garden Cities of Europe, and especially of

England, with a very strictly limited density of people, have developed unique and very successful sociability.

It should be noted, too, that organized sociability has been attempted chiefly in congested parts of American cities, where the largest number of people could be reached with the minimum per capita expenditure, whether private or public. Sociability may be found to be as indigenous in homelike surroundings as in austere barracks of peace, in this country, as well as abroad.

That coöperative housekeeping, eliminating much of the drudgery of that not too thrilling vocation, would be easier in a three-story tenement than in a village with only ten or fifteen cottages per acre and a population of say seventy people, is self-evident. But such coöperative housekeeping is not materially easier, manifestly, with a density of 750 people to the acre, than in continuous buildings, three stories high, with but 200 to 300 to the acre.

To claim that massing people on a limited area would reduce rents, with our present system of taxation, is manifestly ridiculous. The price for the site of a building is determined by the anticipated revenue. If there are to be many and much rentals collected from a plot of land, intensively used for habitation, the price of the land will increase. It is generally admitted that restrictions upon the volume of building will keep down the price of land, and the construction of large buildings increases the price of land. So too, if 1,000 people are concentrated in a small block it might seem slightly cheaper to provide them with sewers and police protection, but, on the other hand, the cost of land for parks, and sites for public buildings of all sorts, will be much greater.

To what extent density of population per acre, provided all live in well-lighted rooms, with perfect sanitary conditions, and no overcrowding affects morbidity and mortality rates is an open question. No adequate statistics, corrected for age, sex, occupation, social and economic status, and ability to get out of the environment have been compiled. One cannot say that a density of 2,500 people to the acre, *ipso facto*, means a death rate five times as great for all ages as a density of 500 to the acre. A modern sanitary apartment house, on a large plot of land with open spaces all around, with an interior yard so constructed that every living-room has adequate sunlight, might be tenanted with 2,500 people to the acre, all of them with incomes permitting ample space, adequate food and rest and

three months' residence in the country every year, with much less serious menace to their health, than that of 500 people to the acre in unsanitary, crowded, dark-roomed tenements. "All things being equal," is a most important qualification in all estimates of mortality or morbidity rates, due to density of population.

Some rather startling testimony on the results of overcrowding is given, however, by medical men. Dr. George Newman says: "In overcrowded communities life is shorter than under other conditions. Sir Shirley Murphy has compared the length of life in Hampstead with that in Southwark, a poor and overcrowded district, and he finds that comparing males in the two communities, out of 1,000 born in Southwark, 326 die before reaching five years of age, while in Hampstead, out of 1,000 born, only 189 die before reaching the age of five years." This may be due to better milk in Hampstead, but Dr. Newman continues:

At ages 25 to 45, when probably, so far as the community is concerned, the economic value of life is at a maximum, the difference in the two communities is most marked. Thus, of 1,000 males aged 25 living in Southwark, 236 die before reaching the age of 45 years, while the corresponding figure for Hampstead is only 125.

A more convincing proof of the disastrous physical results of overcrowding appears when we examine the mortality statistics for various districts. For example in Edgbaston, the suburb of Birmingham, the general death rate is 13.1, in the overcrowded Floodgate area in the middle of the city, it is 31.5. In Hampstead it is only 9.4 as compared with Finsbury, the most crowded tenement district of London, where it is 21.5. In the least overcrowded census area of Finsbury, the death rate is 14.4; in the most overcrowded census area it is 31.4.

Why then should there be any limitation upon the number of cubic feet of space to be provided? Frankly, not because there are not some advantages in having a good many people live in a limited area, but because those advantages are outweighed by the disadvantages. The standard of housing enunciated by various housing experts and by housing laws in various countries must have some basis in accepted conclusions. The tendency today is toward small buildings, and, whenever commercially feasible, individual homes and detached, or at least small multiple homes with a garden for each family. This is the fundamental purpose of the English town planning act of 1909, of the Garden Cities, the growth of which has been marked during the past decade, and of the German system of

districting or zoning cities, *i.e.*, progressively limiting the number of stories and proportion of the lot area that may be occupied in outlying sections of cities, as the distance from the old and built-up part increases.

The factors which lead to such arbitrary limitations, supplemented by regulations as to the cubic air space per occupant, are twofold. Experience, if not refined statistics, proves that for the highest physical development, open spaces, and playgrounds are essential. A noted housing expert stated several years ago that certain congested districts of New York City had not only reached but passed the point of human saturation. There were only a few open air spaces in this district with its teeming population, but the density of population per acre for any considerable area would not exceed 600 to 700.

The death rate in some blocks in New York, with a per acre density of over 1,000, is lower than in certain high-class apartment hotels, with a much less dense population.

No American city with a dense population has adequate parks or open spaces within walking distance. One may safely assume that no American city will ever attempt to provide parks and open spaces anywhere near its congested areas to meet the demands of those areas. The price would be prohibitive.

Would it be desirable, however, to have ten-story tenements, or over, only two rooms deep, or four at most, with say a density of 1,200 to the acre, if 30 square feet of playground, or other open space were provided contiguous thereto, for each unit of population, or even 80 square feet? It is difficult to prove any advantage of such unequal treatment of adjoining land. It is probably equally improbable that even 20 square feet of unoccupied area would be left for each one of the 1,200 people, for even assuming that today there are such vacant areas next to such packed ones, the owners of the vacant areas will not rest content with any smaller profit than will the owners of the land which has been capitalized at the anticipated rentals from the intensively utilized land adjoining. The city will assess this vacant land, if it has an equitable system of assessment, properly enforced, at about the same rate as the improved land. Whether the city, or the owner of the building himself, acquire the vacant land so as to secure to the tenants better lighting and ventilation, a heavy price must be paid for the land, because the owner has

a legal right to utilize his land as intensively as his neighbor, each under our blessed system having an equal right to "improve" his land regardless of the effect upon his neighbors. The law of ancient lights, which prevents an owner of land in England from building on his property in such a way as to interfere with his neighbor's light, does not hold in this country.

Of course, an alternative method is to build tenements on the receding plan, *i.e.*, to build straight up for five or six stories—a distance equal to the width of the street say—and then to set back a sufficient distance so as to permit light to enter the buildings on the opposite side of the street. By sufficient dexterity and ingenuity, such tenements can doubtless be constructed on a plot 5,000 or 10,000 feet square, which, with several recessions, would remotely resemble a terraced garden, for plotted plants might appropriately be planted over the roof in this latest venture in applying the mysticism and occultism of the cubist to modern architecture. Incidentally there will not be much, if any, light for the interior rooms in this monstrosity of modernism. The experiment of constructing such buildings might properly be undertaken by some institution like the Russell Sage Foundation.

In the minds of the common people, however, the question may inadvertently and impertinently crop up, "With less than one-tenth of the housing area of almost every great city in the United States utilized with tenements, and with a large proportion of these cities, areas absolutely unused, why speculate on the theory of how many angels may dance on the point of a needle?"

The writer agrees with the common people, instead of with those housing reformers, whether or not directly connected with realty companies, who are anxious to experiment with high densities of population to see whether the condensed population can thrive under certain conditions. It is a very safe assertion that, if the financial profits of the intensive use of land were secured by the community instead of by land owners, these latter gentlemen would not find so many advantages in massing people to the acre. Home life for the people would be much more attractive, if there were just as much profit for land owners in this sort of housing as in warehousing people. The advantages of a home with a bit of a garden would under that condition be accorded better consideration. The blessing of sunlight and air unexhausted by the lungs of thousands would be realized.

CONGESTION AND RENTS

BY BERNARD J. NEWMAN,

Executive Secretary, Philadelphia Housing Commission.

What is meant when the term congestion is used is generally understood. Usually it is defined as more than an average number of people living in a neighborhood. In a more limited sense it means more than a legal number of persons occupying one room. Congestion as a term applied to the housing of the people means simply too many inhabitants living within a circumscribed area to enable them to obtain the most wholesome living conditions. As here used it does not refer so much to room overcrowding, or to the overcrowding of buildings upon the land, as to the massing of people within restricted areas thereby intensifying the problems of such areas. It varies in its numerical listing, for what would be a moderate congestion in a city like New York, hampered as it is by natural barriers, would be outrageously high for a community like Philadelphia and Chicago; just as a degree of occupancy acceptable for these latter cities would be abnormal for smaller towns. The term, therefore, is variable in so far as the actual number of people is concerned but it is fixed in so far as it applies to the grouping of people in a neighborhood in such numbers as to increase the moral or health risk or the cost of living.

On the other hand, an accurate definition of rent is less prevalent. Usually it is defined as the price paid for the privilege of shelter under a given roof or within a given apartment. Thus many compare the outlay per house while others contrast that per room and on such basis judge the relative exorbitance of one area over another. Such comparisons mean nothing and rent interpreted in these terms has no economic standing. Rent cannot be contrasted with income without taking into consideration all that it purchases. What would generally be called a low rent might in reality be excessively high. Thus, a room leased for 50 cents a week sounds low, but if it purchases an inner room, in a dumb-bell tenement, it is excessively high no matter what proportion of the total income it may chance to be. Or a house of six rooms, without toilet facilities and with a water

supply taken from a pump polluted by neighboring cesspools, though it may be obtained for \$5, or about one-eighth of the tenant's monthly income, may be a higher rent than the \$10 a month paid for a neighboring property of the same size but well drained and with ample water supply. So, too, rent though stated at a higher figure may yet be actually lower owing to the proximity of the house to the workshop and to places of amusement. Rent is the price one pays for the shelter he gets plus the conveniences that aid healthy living, produce economic efficiency, and facilitate wholesome sociability. Its comparison with income cannot be made on the basis of the rent receipt to the pay envelope, but on the basis of the habitation, conveniences and benefits secured as contrasted with the total income. In short, no definite understanding of the effect of congestion upon rents can be grasped unless there is a full comprehension of the fact that rent is a purchasing medium capable of securing, without any change in its monetary reading, helpful or baneful conditions.

As a purely business proposition, rent is determined by three major factors: (1) The cost of buildings, including both the land and house; (2) economic and social conditions; and (3) the number of houses available to meet the demand. It matters very little whether the site is in an area where the density of population is ten or ten hundred per acre, these three factors control rents. Analyzing their influence brings out the accuracy of this postulate.

It is the first of these upon which congestion is most influential. Here two sets of costs must be considered. One is the initial outlay that attends the purchase of the ground and the erection of the building, and the other is the fixed charges that arise from running expenses. That is, the price of the land, the cost of material, the character of the plan determining the amount of materials needed, the labor in designing and in construction, inspection service, legislative enactments determining the fire and health hazards for which provisions must be made, all influence the first investment needed to construct the house. To these costs are added those that arise from municipal improvements such as sewers, water mains, roadways and like investments that are financed by the community but are transferred to the individual and become charges against the site. In a measure, these dual expenses can be considered fixed to the owner. No matter how fluctuating values may be his is a total outlay and charged either at the time of building or at the time of

purchase. His return is upon this outlay, plus other expenses to be mentioned shortly, in the form of rent or increment, either or both. As with the possibility of a gain there goes the possibility of a loss, so the increment may become nil while the rent, under environmental changes or economic conditions, may become, figured on an interest return on the initial investment, only a safeguard against a larger loss. The rent, while initially determined by the owner when erecting his house or by the purchaser when buying, becomes ultimately less a matter of individual control and more a matter of environmental influence. At the time of acquisition, the owner determines the return he expects and adjusts his rent accordingly. After this step has been taken, he relinquishes in a large measure this power and becomes subject to other factors over which he has comparatively little control. It is this element of uncertainty, the guarding against the wrong turn of the neighborhood, that in a large measure creates the speculative character of real estate operations. But rent also depends upon running expenses. Into this factor enter a number of influences among which are taxes, insurance, water rates, in most buildings, lighting and heat in some, but in all, management and repairs. Management varies in its character but is also dependent upon the type of building, becoming complex in multiple buildings where cleaning and janitor service and attendants total sums that make noticeable impressions on the expense account. In smaller buildings the charges for supervision are less though the site risks are greater, determining more frequently the rental possibilities of the property and thus affecting the yearly rental income. In all the tenant risk enters, reduced to a minimum where a reliable family occupies the house or raised to a maximum when an unreliable family is the occupant. Perhaps the largest single item of expense in the average property used for renting purposes, with the probable exception of taxes, is the upkeep or repairs. This varies, though in most buildings erected by jerry-builders it has become a fixed charge; while in old buildings, owing to changes in city ordinances and laws, the improvements necessitated often absorb from six months' to a year's gross rentals.

The second major factor controlling rents finds root in economic and social conditions. Here the variety and location of factories, proximity to transportation and amusements, racial segregation and antipathy, the family income and their physical needs and social

aspirations, industrial depression, panics and good times all play an important part. Lax business management and absentee landlordism, or a landlordism seeking the largest returns but deputizing control to real estate brokers, and insisting upon a management that will mulct the property of its highest net return, also play a part. Occasionally, under the inspiration of a conspiracy among brokers to maintain rents, abnormal conditions are developed and despite normal influences working to adjust the prices charged, higher rates are obtained.

As a rule, the logical result of the working of the foregoing factors upon rents would be to increase the amount exacted from the tenants. It would be quite natural to have such the case. The renting of property is a business with the sole object to get the highest possible return upon the capital outlay and with the least amount of supervision in the getting. The very pressure of this desire is responsible for the maintenance of a check upon exorbitance, for it creates a competition among owners, stimulates building and throws into the market a greater supply of houses, thereby creating the third factor already mentioned. Building booms, which come to every town, are the natural responses of loose capital to the call of this investment field. Such competition brings the house under the influence of the law of supply and demand. In some communities, as in Philadelphia, other influences enter. A type of house requiring relatively a small outlay of capital, a well-organized building and loan association system, with its easily disposed-of first and second mortgages, the legitimatizing of such for loans by banking laws, a systematized form of operative building and a simple procedure in obtaining necessary funds for construction purposes, all encourage speculative building and overbuilding. By putting the erection of houses upon a comparatively speculative basis, a group of operators have been called into the field who look for their profit not from rentals but from quick sales. They place a product on the market independent of rental considerations. They pay their expenses by creating mortgages and making transfers with a small cash bonus for themselves. The lure of speculation is magnetic and results in an oversupply of houses. This has the direct effect of throwing into the field of competition more houses than are needed to supply the demand. Wherever a like situation arises a check is established

upon the abnormal encroachment, other than changes economic conditions would cause, of higher rents for like accommodations.

These three factors act upon properties to determine rentals. They are the normal influences at work in every community where normal conditions prevail. They act even under abnormal conditions in the constant warfare carried on by invested capital to earn the largest possible return. The housing reformer, under the present economic system, welcomes this play of forces and has a practical interest in seeing that the result is such as to enable a legitimate return to be secured on the investment made. Private capital and individual initiative in housing erection can only be secured when the result obtainable is worth the effort to obtain it. Whenever any combination of causes mitigates this return there are one or more things bound to happen. As a result there is a house famine, or a crowding of two or more families into the space formerly occupied by one, thus manufacturing the tenement, or a change in the character of occupancy of homes, converting the privacy of the dwelling into the promiscuity of the rooming house, intensifying in both cases the moral and health problem of the people concerned.

These are the factors that primarily determine rent. It can readily be understood that the first two respond more acutely to congestion of population. Especially is this the case with the first or that which is included in the cost of the site and the building plus the upkeep and running expenses. A discussion of the second factor is hardly worth while here since it is so closely associated with the causes of congestion. With the present system of taxation, the more people are herded together the higher the site value becomes. Certain given areas under observation have, within recent years, advanced several hundred per cent on account of the concentration of population about them. This increased cost necessitates a greater outlay simply for the ground upon which to erect the building. Typical instances of this increased cost are found in selected areas in every city where such values are so great that it is financially unprofitable to erect any other than the multiple type of building. Added to this handicap is the outlay called for by a larger tax assessment, an increase that is not temporary to be met at one time and then charged into the initial cost, but one that runs on from year to year and for which provision must be determined in advance so

that whatever may be the structure erected it must provide a sufficient income to carry it in the yearly charges. Thus, before a single shovel has been put into the ground toward the future building, the overcrowding of people necessitates a larger capital to correspond with the larger costs. The site determines the minimum building costs and the character of the house, creating a larger risk and restricting the number who can take it. But the effect does not stop here. With the larger building, the cost of management is raised, while the outlay for upkeep is correspondingly larger. Moreover, certain typical results in the construction of the building follows. The health risk and the fire hazard are increased through the height, proximity, and occupancy of many rooms under one roof. Hence, legislators, without scientific data, create standards of structure, fire-proofing and fire-escapes, girders and floor stress, often four and five times beyond actual safety requirements, but justified on the ground that lax inspection and the evasions of the jerry-builder force these added precautions. These, together with the plumbing requirements, provisions for light and ventilation made necessary by the increased occupancy, fix upon the buildings an added cost that further affects the amount of capital invested upon which a profitable return must be secured. Thus the overcrowding of people on the land forces added stories to the building, adding materially to the cost per cubic foot and necessarily establishing the financial basis for fixing the ultimate rental return. Moreover, when it is borne in mind that rent is measured not so much in terms of rooms but in terms of the benefits that produce healthy, moral and comfortable living conditions, the financial increase of rents in multiple buildings is added to by the lesser number of cubic feet of air space in the apartments, the smaller floor area and the restricted light and ventilation. These things are not necessary accompaniments of multiple dwellings but with the cost as now assessed and cost factors multiplied by unscientific handling of congestion problems they are the actual concomitants of such construction.

Other factors also enter when too many people occupy a given area and thereby raise the actual rents. These come through municipal improvements forced by the added traffic and service rendered to the individual by the community. The sewer system has to be enlarged, water mains likewise have to be enlarged, fire protection increased, high pressure stations built to pump an increased volume

of water and to raise it with adequate pressure to the floor heights. Health regulations and inspection, police supervision and the various ramifications of civic life made necessary by crime and the care and control it obligates, including even added street lights and shorter police patrols, all add their mite to the sum total of carrying costs. Moreover, other municipal costs which have their reflex upon the property holder enter, such as traffic regulations and facilities, the delays occurring on streets laid out to carry a normal amount of traffic but, under the increased congestion, obliged to serve 100 where before they had served 1, the wear and tear on the pavements, calling for more costly surfacing and more frequent cleaning, all of which are normal services rendered in the large by each community for all its citizens but intensified when the population becomes concentrated within restricted areas. The increased expenditure from each is little, compared with the site increase in costs, but they all help to become a consequential factor when taken in the bulk. Added to these increases are the risks forced upon the tenants in the form of reduced room space, presenting in the growing family its moral dangers, and the exposure to the spread of contagion accompanying the common use of halls and stairs and, as is most frequently the case, of toilet facilities, with all the expenses attendant upon such. The rent, in such areas, purchases fewer of the conveniences and safeguards that make for wholesome living. To sum up, congestion enhances values, enlarges requisite investments, reduces both the available floor area within the economic reach of the tenant and the returns obtainable in personal well being and comfort.

It must be remembered that this analysis of the effect of congestion upon rents is made on the basis of building operations and structural changes forced by the effort to adapt an area to a larger population than should normally occupy it. Many individual houses at one time occupied by families of wealth and rented at a price largely enhanced by the exclusiveness of such, under the influence of a change in occupancy which brings in an undesirable element, decline in rental value. Many brown-stone fronts in our large cities have lost their investment attractiveness to their original purchasers through such population transformation, and instead of returning a gross rental of \$800 a year, now return only \$450. This does not, however, alter the facts as previously set forth; it only emphasizes the controlling influence of supply and demand. Here the demand

for the private residence in this particular neighborhood at the larger rental fell off entirely. The encroachments of the multitude upon the exclusiveness of the few became too ever present until the former finally won out. Consequently another type of occupancy had to be catered to, for which the buildings were not structurally adapted. Under the new condition economy of space, so necessary in order to obtain the full rental value of the capital invested, could not be secured. The investor faced a loss anyway, and rather than sacrifice all involved in the building itself, chose to salvage a part, actually writing into his loss account the difference in capital outlay equivalent to the amount represented by the difference in rent.

This illustration is cited in order to show that the loss is one of judgment, just as in any speculation that turns out poorly no matter if it is stretched over a long period of years. As a matter of fact there are comparatively few cases where the gross loss falls upon one person. The transfers of title are so many that the loss is distributed. It is the supply and demand, modified by social and economic conditions, therefore, that serve to check too abnormal an increase in rents as a result of the increased cost of building.

The fact of this is borne out further by the effect which improvements have upon increased rents. It is commonly believed that every sum expended upon a property to better it must earn its own return. Very little data are available, but that which are clearly prove that such expenditures are a clear outlay in so far as the owner's financial return is concerned, unless there are too few houses for rent in like neighborhoods to affect the market. A questionnaire, recently sent to about fifty cities, brought forth data which showed that improvements increased rents when there was a house famine and they had no effect upon rents when the supply more than met the demand. The best figures available came from Philadelphia. There, for 1,332 houses, where the average cost of improvements approximated from six to eight months' rentals, only on 8.4 per cent were the rents increased, while in 1.2 per cent instances they were reduced. It must be clearly borne in mind, however, that these changes were in improvements that did not add one more room space to the houses. Invariably in the latter case the additional room was accompanied by an increased rental.

If the foregoing analysis of the factors that control rents is correct, and if the effect of congestion is as has been set forth, certain

definite changes cannot be introduced too quickly. In the first place, the causes that produce congestion need to be brought under control. Comparatively little effort has been made in this direction. The concentration of people upon limited areas has been taken as inevitable. Under a proper municipal program it is not inevitable. When present, it is only the tangible evidence of communal neglect and the lack of proper planning. In the second place, legislation controlling building construction must be reduced to a scientific basis. Pseudo reformers who secure legislative restrictions or establish standards by guess work must be persuaded to do some mathematical calculation upon scientifically acquired data. When the cost of materials and the amount to be used play so large a part in the extra cost of building, all guess work as to what should and should not be ought to be ruled out. Municipal inspection service with adequate penalties to make it effective must be placed upon an efficient basis so that the honest builder and owner shall not be penalized by stringent structural requirements because the unscrupulous contractor is likewise engaged in construction work. Where political conditions make it unfeasible for municipalities to go into the building of homes, a form of municipal governmental loan at low interest and easy payments must be made available so as to offset the exorbitant rates now charged to operative builders, thereby reducing proportionately the initial cost. To further reduce the carrying cost of the house, preferential taxes must be inaugurated, while an adequate zoning system with restricted uses of tenantry in given areas must be established, thereby controlling the neighborhood changes that are now so largely responsible for the deterioration which eventually produces the slum.

Without these, no matter what other form of housing betterment is attempted, rents will not be adjusted to the point where they will give the investor his fair share and the tenant his just return at one and the same time.

HOUSING REFORM THROUGH LEGISLATION

By LAWRENCE VEILLER,

Director, National Housing Association, New York.

In these days when all things are being challenged it is perhaps not inappropriate for the efficacy of housing reform through legislation to be also called in question. Perhaps it is just as well that this should be so, for it enables us to review the grounds upon which the movement for housing reform is based.

To the social reformer who believes that the solution of the housing problem is to be found in a change in methods of taxation or in a new industrial era this article will have but little interest. How delightful it would be to be able to believe that all that is needed to bring about proper housing conditions is a change in the economic status of the working people! That given enough wages, slums would vanish! Flying carpets, wishing caps and magic philters have from time immemorial always had an indescribable charm for humanity. But alas, it is not to be done so easily! City slums cannot by the wave of a necromancer's wand become gardens of delight.

Those of us who are veterans in the cause of housing reform—though perhaps it is a little embarrassing to have to admit being a veteran in any cause—have been conscious for some time past that the "younger statesmen" have been getting restive and dissatisfied with the methods heretofore employed in this country in attempting to solve the housing problem. I am not quite sure whether we ought to call our friends "post-impressionists" or whether they do not more truly belong to the cubist and futurist schools, for the field of social reform as well as that of art is blessed with these manifestations of ultra-modern thought.

I must confess that it is rather interesting to find what has been America's distinctive contribution to the solution of the housing problem called in question. For America has not excelled other countries in this movement in other respects. Its one and distinctive contribution has been its system of control of these evils through legislation.

We have not as yet at any rate developed examples of artistic

communities, either garden cities or garden suburbs, that can successfully compete with what has been done in recent years by England. Nor has America in its model houses produced results, either in our crowded cities or in our small towns, that are in any way superior to the work that has been done on the other side of the ocean—in Germany, in Great Britain or in France. Nor have we anything especially noteworthy to show in the aid which the government has extended to the housing of the workers. America as yet has done nothing in this field. Those who are interested in such aspects of housing reform must look to France, Belgium and other European countries. Municipal housing in America is unknown. In that field, therefore, the other countries of the world have little to learn from us. Nor have we developed anything especially noteworthy in systems of transit to facilitate the moving of the workers from their place of industry to homes outside of the city. Here again we must look to Europe for example. Neither can those who believe in taxation as an influence affecting housing conditions look to us for advice or aid. As yet nothing has been done in America in this direction. Here, too, we must look to Europe.

If, then, we have nothing especial to show the world in the way of results in these various directions, what, it may be asked, has America done in its seventy years of effort at housing reform which is worthy of note and which may be helpful to other communities grappling with this problem? The one distinctive contribution which America has made has been in its system of control of slums and of bad housing conditions through the enactment of regulative laws and their enforcement.

While it is true that we have been conscious of the housing problem in America for seventy years, this is true only of the one city of New York, where housing conditions are unique, and it is not at all true of the rest of the country. While bad housing conditions in greater or less degree are to be found throughout all parts of the United States as they are in all other countries, most of the evils have developed in comparatively recent years and the movement for their reform has been of very short duration. But the effort that is now being made in America to solve the housing problem is deliberately being taken along the lines of legal regulation and not in the other directions referred to at the beginning of this article. If we are going in the wrong direction, it is time we knew it.

While the testimony of the stranger within our gates is not always to be taken literally and allowance must necessarily be made for the complimentary attitude of the visitor to our shores, still the testimony that we have recently had from a representative of the Hungarian government is a striking tribute to the changed conditions which have come about in recent years in one city at least, viz: the city of New York. Dr. Nemenyi, of Budapest, sent here by the Hungarian government to study America's methods of dealing with the housing problem, in a recent interview said:

New York's tenement laws and their enforcement have no parallel anywhere in Europe. New York's handling of the tenement problem is, to European eyes, unique, admirable, impressive. Conditions in the worst of your tenements are vastly better than in the worst of Europe's. Your laws have produced this superiority.

After a four weeks' study of New York's tenements in all parts of the city, Dr. Nemenyi made this utterance and added:

The overshadowing feature of the New York tenement situation is the kind of laws you have and the way you force obedience to them.

Your tenements as a whole are far better than those of Europe, while your slums are not nearly as bad as those of many cities in Europe. Of course there are tenement house and building laws in Hungary and Europe generally, but they are not such laws as you have. They do not protect the health and lives of dwellers in the tenements as do yours, and it is for this reason that Hungary wishes to revise her laws along American lines.

An understanding of whether housing reform has been successful along certain lines or not depends a great deal upon one's conception of what housing reform is and before there can be an adequate discussion of what constitutes housing reform there must be agreement as to what the housing problem is. In other words, we must know what we are going to reform before we attempt to reform it.

There is a great variety of opinions on this subject, especially among those to whom it is more or less a new subject. Some of our friends seem to believe that the housing problem is essentially the problem of cheap houses; as some have expressed it "of providing a home for the man who cannot afford to pay more than \$9 a month." But this is a singularly misleading and restricted view of a large and complicated question. It is but one aspect of it. It would be just as appropriate to say that the problem of child welfare is the providing of milk at 4 cents a quart.

Another group believe that the housing problem is the problem of rapid transit. With their eyes fixed upon the more crowded quarters of some of the larger cities where the problem of moving back and forth the vast throngs who journey from one part of the city to another twice a day is fraught with great difficulties, they conceive that the housing problem is the problem of rapid transit and that if cheap and effective rapid transit could be once provided the housing problem would be solved. This is not a new view. We have encountered it before. Still another element believes that the housing problem is the problem of supplying a sufficient quantity of housing accommodations and that anything which tends to encourage the building of more houses will solve the housing problem, the assumption being that there is a dearth of housing accommodations and that people live under bad conditions simply because there are not enough houses to go around. There is a grain of truth in all these views. Each one is a factor involved in the housing problem, but no one of them can be truthfully said to constitute that problem.

The housing problem is the problem of enabling the great mass of the people who want to live in decent surroundings and bring up their children under proper conditions to have such opportunities. It is also to a very large extent the problem of preventing other people who either do not care for decent conditions or are unable to achieve them from maintaining conditions which are a menace to their neighbors and to the community and to civilization.

If we accept this view of what constitutes the housing problem we see that it has many sides; that it is not only an economic problem, that it is not only a question of supply and demand and of furnishing a sufficient quantity of homes, but also that the quality of the home is of vital importance. The assumption that thousands of people live under conditions such as are found in our large cities throughout America because there are no other places in which they can live is wholly unwarranted and not borne out by the facts. There is no use in dodging the question. We may as well frankly admit that there is a considerable portion of our population who will live in any kind of abode that they can get irrespective of how unhygienic it may be.

But the social reformer is in danger of having a somewhat distorted view of this question. His attention is necessarily focused to a very great extent upon the abnormal conditions which prevail.

It is very easy for him to lose sight of the fact that the great mass of the people in a country like America are not slum dwellers and do not live under the bad conditions which he sees around him. There is probably no country in the world where the individual detached house occupied by a single family, containing most of the comforts and conveniences of living, exists to the extent that it does in America. This is the normal type of home of the American wage-earner. The conditions which are found in the foreign colonies and slums of our large cities are exceptional and abnormal, symptoms of disease, not of health; conditions which of course must be dealt with. But we should not let their existence overshadow or cloud our vision with regard to the real conditions which exist.

If housing reform is not to be achieved through legislation, as it is claimed, how are we, I wonder, to remedy the main housing evils which we find in America today? Take the evil of the privy vault, for example, probably the greatest single evil that we have to face at the present time, certainly the greatest evil from a sanitary point of view. I can think of a hundred cities where privy vaults exist literally by the thousands. Each one of these, as is well recognized, is a potent source of infection to the community. If this evil is not to be remedied through legislation, I wonder how the advocates of other methods of housing reform would go to work to get rid of these privy vaults. Do they really believe that in a city of 500,000 people where there are 12,000 of these vaults in existence today, the establishment of a garden city or suburb on the outskirts in which possibly a thousand people might be housed, will get rid of the vaults?

Assuming for the sake of argument that such a garden city is established and that a goodly number of people move out to it, deserting the homes which they have previously occupied, is there anything in the experience of any city in America that would show that such homes would thereupon become vacant and in a short time be torn down and the land converted to other uses? If this were so, then it is conceivable that through such a march of events, if a sufficient number of people made this migration, that the vaults might ultimately disappear, but unfortunately there has been no such experience in the history of any community in this country or any other. It is true there has never been any development of garden cities or garden suburbs on so large a scale as to have any material effect upon the housing conditions of the great mass of a city's popu-

lation. But even if there were, the assumption that the houses thus vacated would cease to be occupied leaves out of consideration the growth of cities, the tremendous increase in population which goes on year by year in our thriving communities. Because of this growth the quarters thus vacated are immediately occupied by new groups of working people. Experience shows clearly one thing above all others, that so long as houses exist, they are likely to be occupied.

If the establishment of garden cities would not rid the city of this plague of privy vaults, I am puzzled to see in just what way the development of better transit facilities would accomplish this result. The arguments that have just been advanced in regard to garden cities seem to have equal force in this case as well. Improved transit facilities, it is true, might move many of the population to the more sparsely settled sections of the city, but it is also equally true that in such sections privies are apt to exist to a far greater extent than they do in the older sections. It is the new section, as a rule, that is unsewered and undeveloped in these directions. The tendency of better transit then would be, so far as one can see, not to remove any of the existing objectionable privy vaults, but on the contrary, probably to increase the total number of such vaults within the community.

Changes in methods of taxation, advocated as tending to encourage the building to a greater degree of new houses, would at best operate in the same manner as the development of garden cities. At best the new houses would be occupied by the well-to-do members of the community. New houses are always more expensive than old ones just as a new suit of clothes costs more than a second-hand one. I am similarly puzzled to see how the building of a group of so-called "model" houses would effect the removal of the 12,000 privy vaults in the city in question, or how government subsidies to persons wishing to build houses would work a similar reform.

The only way that I know of by which such conditions can be ended is through the enactment of laws which will compel the removal of these nuisances and the substitution of modern sanitary conveniences. This is not theory but the result of the experience of many cities.

Legislation alone, of course, will not do it. Laws must be enforced. Some of our social reformers seem to think that getting a housing law upon the statute books will change housing conditions.

Unfortunately, laws do not execute themselves and no law will do much unless an adequate system of enforcement of that law is also provided.

We have seen how legislation is necessary to get rid of the privy vault; let us take another housing evil—the evil of cellar dwellings. In many cities we find a considerable part of the population living underground, in rooms which are damp, dark and badly ventilated, rooms not fit for human beings to live in. In some cities there are many thousands of such rooms, and singularly enough, generally where such conditions exist there is no lack of proper housing accommodations.

I am here puzzled also as to how the establishment of garden cities or improvement in our systems of transit or changes in methods of taxation or government subsidies to builders of homes will drive these people from their dismal cellars. So long as these cellar rooms stay there, so long as there are landlords to derive a profit from renting them and so long as there are people poor enough and unfortunate enough to live in them, they will be occupied. There is no city in America in which it is not a common experience to find such rooms occupied in considerable number and to find in the same town a very large quantity of vacant apartments of a much more adequate and sanitary type. The only method that I know of by which the occupancy of these unfit habitations can be stopped is to forbid people to live in them. This can be done only through legislation; but even then people will live there, unless the laws are enforced.

Similarly with regard to dark rooms. By which one of the above methods now so urgently advocated can we cope with a situation which existed a few years ago in one of our large cities where it was discovered that there were over 360,000 windowless rooms in the homes of the working people—rooms without light and air, each one a potent source of danger and a serious factor in the spread and development of tuberculosis? How can a garden city or improved methods of taxation get rid of these 360,000 dark rooms? The only way I know of to get rid of a dark room is to let the light into it, to cut a window in or to tear down the house. The only way I know to stop people living in dark rooms is to forbid it and then see that the law is enforced. That such a method is effective, the experience of every city in which laws of this kind have been adopted clearly shows. True it is a painful operation. It takes time and

energy and above all things patience. It means constant effort. It means attention to innumerable details. It means foregoing, often, immediate results to secure larger future return.

And so one might go through all of the other important forms of housing evils as we know them and ask similar questions. But the answer in each case is the same. The great mass of the housing evils which we encounter today can only be remedied through legislation. If we find a city in which the men who are building houses build houses which are not fit for human beings to live in, which contain dark rooms, which have unsanitary plumbing, which do not afford adequate protection in case of fire, what way is there other than through legislation to bring about the building of the right kind of houses?

There are two other ways open, education and example. It might be possible to so impress upon builders the disadvantages to the community of such forms of construction that they would willingly forego the larger profits which result from them and adopt the more desired and less remunerative one, but unless the breed of builders becomes very different from what it has been since the beginning of the world, I fear there is little likelihood of very large results flowing from this source. Those who wish to undertake that kind of an educational campaign will, I fear, become discouraged in a short time. The prospect of securing results is not an alluring one.

Surely, someone will say, the force of example should be a potent influence. Building a group of model houses ought to influence the types of houses that other builders will build. Perhaps it ought. But the writer must confess that he has not as yet been able to discover any instance where it has worked in this way. It is very simple to put the matter to the test. Let any group of people who are taking up housing reform and who think that larger results can be obtained through these methods of education and example than through legislative action try their plan and await results. At least they will have the gratification of knowing that they are not being bound by what other people have done.

Housing is a commodity like food or clothes and the methods to be employed in securing the right kind of housing for the people of any community differ in no essential respect from the methods to be employed in providing the right kind of food or clothing for that

community. In a city where the children of the poor were dying from typhoid because of impure milk, I think we should feel that it was trifling with a serious problem if it were urged that nothing could be done through legislation but that the only way to insure a better milk supply was to encourage the people to move to the country where they could have their own cows and thus insure the right kind of supply for their children.

We should also feel that we were playing with a vital situation were it proposed to meet a crisis of this kind through the establishment of a model dairy which would furnish milk to 1 per cent of the children of the city and at the same time allow the other 99 per cent to be poisoned by bad milk. What every community has done under such circumstances has been to rise in its might and say bad milk shall not be sold. In other words, they have sought the remedy for such a condition through law and law enforcement, and they have gotten results. It is all right to establish a model dairy to encourage others and show how good milk can be produced, but this should follow an ordinance prohibiting the sale of skim milk or milk containing too large a bacterial count. No sane community would accept the establishment of one model dairy as a substitute for that kind of legislation. Good housing is to be provided in the same way.

In housing reform we need especially to beware of importations from across the sea, not because they are from across the sea—I hope no such provincial view of life controls us—but because the conditions which exist in the old-world countries are so totally different from those which prevail in America. And we are dealing with America, not Europe. We are not dealing as they are with a homogeneous population of but one race. On the contrary, we are seeking to amalgamate all races and nationalities into a new and different race from anything the world has ever seen before. Nor are we living in a monarchy where comprehensive plans may be executed by royal edict and where the habit of obedience to constituted authority has become fixed and absolute. On the contrary we are dealing with conditions that exist in a democracy where our rulers are rulers of the hour, where every man is as good as, if not better than, his neighbor, where laws are made to be broken, and where any suggestion of obedience to constituted authority is looked on as an invasion of the rights of the individual, and where liberty has become license. The methods which have been suc-

cessful in Europe have been so because they have been suited to the conditions which exist there. To be successful here we should have to engraft upon our civilization the governmental bureaucracy which we find in Europe. For these reasons the label "made in Germany" when attached to plans for housing reform should be viewed with caution.

The question which every housing reformer must face is, what method will give the largest results with the least expenditure of energy and effort? It is largely a question of emphasis. The method which will return 90 per cent of results and not 10 per cent is obviously the method to follow. No one thing will in itself solve the housing problem in any community. Housing evils are of so manifold a nature and have so many manifestations that it is of course apparent that many things must be done before right conditions can be achieved. There is no method of housing reform which the housing reformer should not adopt provided it will produce results. It must always be submitted to this practical test. In some cases all methods are to be employed, not merely one.

That legislation alone will solve the housing problem is of course absurd. Laws to be effective must be enforced. But the point that I should wish to lay emphasis upon is that in most cases the largest results have come from legislative action and that until certain fundamental evils have been remedied it is futile, or worse, to adopt the methods of housing reform which may be said to belong to the post-graduate period rather than to the kindergarten stage of a community's development. In other words, we must get rid of our slums before we establish garden cities. We must stop people living in cellars before we concern ourselves with changes in methods of taxation. We must make it impossible for builders to build dark rooms in new houses before we urge the government to subsidize the building of houses. We must abolish privy vaults before we build model tenements. When these things have been done there is no question but that effort can be profitably expended in the other directions mentioned.

WHEREIN DIRECT HOUSING LEGISLATION FAILS

BY EDWARD T. HARTMAN,

Secretary, Massachusetts Civic League, Boston.

Direct housing legislation is useful and always will be as a means of voicing public opinion and setting standards below which one may not go under any circumstances. The careless and the pernicious have most always to be reached in this way. But housing legislation deals with a result. Bad housing, while it causes many difficulties, is itself essentially a result. To solve it we must reach the causes. The tendencies in home construction and maintenance are the result; the causes are various.

Housing legislation fails to regulate taxation and therefore largely fails to solve the housing problem. Housing legislation increases the cost of homes; increases the tax on homes; increases rents; forces people into poorer homes; makes home ownership more difficult; delays marriage; retards the development of the home and parental instincts; tends to the perversion of these instincts. Housing legislation does not regulate taxation, for we tax homes. When a man builds a home we put a penalty on him. Housing legislation does not recognize the unearned increment, therefore it penalizes the man who helps to build up the community and favors the man who maintains vacant lots, and develops weed patches and dump heaps.

The tax on homes increases because housing legislation does not bring us to conduct the enterprises which help to keep down taxes. We run all non-profitable enterprises in large part by taxing improved lots, industries and homes and turn over to private groups all profitable enterprises.

Housing legislation fails to show us that one lot is as valuable to the community as the lot next to it, so we tax the improved lot higher than the vacant lot, and tax the improvements in addition.

Housing legislation fails to regulate the planning and the development of a city. Tom, Dick and Harry put streets of the kind they please, where they please; and the taxes on improved lots, industries and homes have to pay for making the streets usable and for getting sewers into them.

Housing laws do not control the number of houses to the acre, as does the English town-planning act of 1909, except in a very general way. Exercise of this power would prevent congestion on the land and put a very effective stop to land speculation, because land with a restricted use will not attract speculators like unrestricted land. This restriction would enable people to live under better conditions in respect to both cost and sanitary conditions. Direct housing laws do not reach this problem.

Housing laws do not regulate the improvement of old streets. It often happens that control of an area is secured, a law is passed providing for the widening of a narrow street through it, the improved lots and homes are taxed to pay a large price for the land and property taken and for making a new street. The value of the property in the neighborhood is enormously increased. Housing laws fail to give this increase to those who paid for making it possible. This unjust imposition on people not benefited is a favorite method of city building in many places.

Housing laws fail to regulate monopoly, so improved lots and homes pay the taxes which ought to be paid by monopoly. Monopoly has this advantage over homes reached by housing laws and it also has the power to increase the other costs of living so that people have to move into poorer homes and home ownership becomes more difficult, family life is held back, good instincts are perverted and bad instincts gain a foothold.

Housing laws do not control transportation, so people have difficulty in getting out to light, ventilation, and a helpful environment. The city can thus not grow as it ought and improved lots are more used, houses are more crowded, sickness, immorality and poverty are increased and improved lots and homes have to be taxed more to take care of the results.

Housing laws fail to promote home ownership. To develop a community of citizens home ownership is desirable. The cities of Germany recognize this. Ulm, for example, is embarked on a campaign to become a city of citizens owning homes. The city is building the homes. It will build homes for all who can pay down 10 per cent of the cost and it intends to build homes for all who will begin to save the 10 per cent required.

Housing laws in America fail because they do not distinguish between citizen building and fortune building. They fail to show our

city, state and national governments that the welfare of all the people is more important than the welfare of a few at the expense of all the remainder.

Housing laws fail to affect wages. They increase efficiency, but this increase goes more to the employer than to the employee. The laws increase the cost of houses but only remotely affect wages so as to make people able to occupy houses at increased rentals. Hence people are kept out of good homes and forced into bad homes.

Housing laws fail to affect the honesty of labor. Labor is to a large extent given to doing as little as possible for a day's work. The cost of a day's work goes into the cost of homes and of living. An honest day's work helps to reduce the cost of homes and of living.

Housing laws fail to affect public opinion. All we do depends on public opinion. In Europe cities are run by bodies of men picked for their ability to run cities properly. They keep land values down largely by restraining land speculation and by public ownership of large areas of land. They keep down taxes on homes by taxing land and by running paying enterprises as well as losing enterprises. We will have to content ourselves with less personal freedom, which is too commonly mere license for the few. Freedom of action for the few comes to us at the expense of "thralldom and repression for the many."

Housing laws fail because they do not reach the constitutions. Written constitutions ought to be amended frequently, for the world changes. When our constitutions were written they were fixed and changes were made difficult, almost impossible. Our housing laws encounter this difficulty and we have adopted means of getting around it only to a very slight extent. A real constitution is the voice of the living present, not of the dead past, except as the past gives us experience.

It is a mere truism that the people make the community, yet many people, among them many who call themselves housing reformers, think that business and houses make the community. Business and homes are essential, but only as servants of the people. Housing laws, now about all that any housing organization has recognized, fail to make good homes obtainable homes. They will continue to fail till they are worked out jointly with the other problems mentioned.

Housing laws fail in all these things in America because America

treats them as a detached proposition, which they are not. Housing laws in America are not, however, a total failure. When they are developed they help people to see other things needed and when these are once fully observed the necessary things will be supplied and housing laws will be interwoven with all the other needed regulations to the end that people may live and grow strong. The people are the community and the community, business and all, go up as its human element goes up, down as its human element goes down.

THE OLD HOUSE AS A SOCIAL PROBLEM

BY MILDRED CHADSEY,

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The subject of this paper is an invocation to the muse of eloquence. "About the old house clusters tender memories and dear associations," or again, "Home life in America is lacking in flavor because our houses are too new and without setting." Here the muse departs for she learns that we are not interested in the old house from the standpoint of its years, but that for the purpose of this paper we are classing some houses of less than twenty-five years as old and some of more than fifty years as new. As a matter of fact, the mere passage of time has as little to do in determining the age of a house as it does in determining the age of an individual. Much more depends upon the material with which the years have to work and upon environment. The two types of old houses that we are interested in are, first, the small, poorly designed and cheaply constructed house that later becomes a miserable shack, and second, the large substantially built house that has outlived its usefulness as the residence of its owner and is transformed into a makeshift tenement.

Every city has its heritage of miserable, dilapidated shacks that were built in violation of every code of beauty, safety, sanitation and comfort, or have long outlived the code under which they were built. Fifty years ago, when most of our cities were only growing towns, these houses with cisterns, stables and earth closets in the yard were comparatively harmless because the yards were not crowded with other houses, and so they had an opportunity for light, fresh air and cleanliness that distance affords, but as the city has grown, as other houses have been built upon the lots, and as no repairs or improvements have been made, these houses have deteriorated into wretched hovels where human derelicts congregate and breed disease and vice. Not remotely removed from the heart of "one of our large and beautiful cities" there was until yesterday such an infected area where forty of these shacks, built by squatters

a generation or so ago, huddled together on a hillside property owned by a railroad. As more of these shacks were built year by year, the yards became so crowded that the refuse of the earth closets stained and dampened the walls and floors of the lower tier of houses, and the ditches that formerly carried away surface drainage became open sewers, and the cisterns, getting not only the water from begrimed roofs but the seepage from filthy yards, became germ-breeding holes. In one of these houses lived a woman who, with the aid of charity that was not charity, was supporting, by washing, a syphilitic husband, a tubercular sister and five children, four of whom were physically and mentally defective. Who can reckon the number of people who were exposed to the dangers of disease that emanated from this one old house? Yet the railroad company hesitated to order these shacks removed because many of their occupants had been in its employ or were the mothers or widows of those who had been in its employ. To say that the company felt that it was doing these people a kindness to let them live under such conditions might be overstating the case, but at least it felt that it would be doing them an unkindness to order them to vacate and to remove the shacks.

The other type of old house that we are interested in is the old building remodeled into the makeshift tenement. It represents the architectural splendors of comfortable living of a few generations ago, and because of its durability, it has survived in a neighborhood where all else has changed. It represents decadent respectability and stands as a monument to the ruthless waste and needless sacrifice of an evershifting population because our cities have been allowed to grow without plan or reason. By adding storerooms on the front, by joining other old houses on the rear, by subdividing rooms with thin board partitions, thus creating unventilated, inside rooms, these houses have been changed into flimsy tenements that are worse than the dumb-bell and railroad types of tenements of New York City. The apartments thus made are without privacy, without fire prevention, without plumbing and generally, without a possibility of real homemaking. I know of several such tenements where it is necessary to go through one suite to get to another, and I know of one such tenement where it is necessary to go over a roof of one apartment to get to another. Practically all of these tenements have insufficient water supplies and toilet facilities. In many cases what was once the bathroom of a one-family house now serves as a public toilet

for two to eight families. When a tenement house inspector ordered an owner of one such a place to make some necessary improvements, he, who by the way was on the city's payroll, replied, "What was good enough for me to be born in is good enough for that bunch of foreigners to live in," and this notwithstanding the fact that he was born there over fifty years ago and was a member of one family and today there are four families occupying the house with little or no repairs in twenty years.

In this day when we are learning that public health is a public asset and that it is a purchasable commodity, let us inquire what the effect of the old house is upon the health of its occupants. That these miserable dwellings that violate every sanitary law afford an excellent environment for the development and spread of the germs of a number of diseases is self-evident. We all know that tuberculosis flourishes best in dark and damp rooms, that the typhoid bacillus is conveyed through a polluted food supply and venereal disease is spread by overcrowding. Sanitary surveys everywhere are telling the close relationship between disease and old, insanitary dwellings. Recently a study of two contrasting districts was made in Cleveland, and one of the results was the showing in actual figures of the relation of disease and death to the insanitary dwellings. One district is in the old crowded business section of the city, where the population houses itself in abominable, makeshift tenements and dilapidated, filthy houses that are never repaired or cleaned up because the owners expect soon to sell the property for business purposes. The other district, which was chosen for the purpose of contrast, is in the outlying section of the city near some manufacturing plants, and is made up mostly of comparatively new houses, many of which are being purchased by the tenants, and practically all of which are maintained in a sanitary, even attractive condition, though the rents are no higher than they are for the houses in insanitary condition. In the first district there were 908 cases of tuberculosis since 1907 or 52 per 1,000. In the second district there were 450 or 28 per 1,000. In the first district there were 665 cases of contagious disease in 1912 or 3 per 1,000. In the second district there were 286 cases of contagious disease or 18 per 1,000. Other cities are finding out the same facts. The welfare commission of Kansas City found that infant mortality was from five to seven times as bad in districts where the disgraceful shacks and hovels which have defaced

the city for so long exist than in any other part of the city. In a study of fifty backward children from a Chicago public school, it was found out that forty-three were physically defective, and every one of these forty-three children came from houses that were so sordid and insanitary that they were unworthy to be called homes. A report from Glasgow shows that children that come from homes of one or two rooms are smaller and lighter in weight than those brought up in larger and less crowded and better lighted rooms. However, to discuss from a statistical or scientific standpoint, a fact so obvious as the effects of the filthy, dilapidated, overcrowded house upon the health of its occupants, is as futile as it is unnecessary. Just as we have passed a day when a health officer can say, "It was the will of God to visit the community with an epidemic of typhoid," so we have passed the day when we need be told that dark, damp, unventilated rooms, foul plumbing, vault closets and filthy yards and stables breed germs faster than all the doctors in the land can cure the resulting diseases.

The effects of the old house upon the moral and social life of a community are almost as obvious as they are upon health. Contrast the sanitary maps of any city that show where its neglected dwellings are, with those that show where its juvenile delinquents, its wayward girls, its insane mothers, and deserting fathers, its drunkards and drug habitues, and its criminals come from, and you will find that they indicate the same areas. We must accept as a matter of course that the child reared in these unhealthy and unattractive homes where there is not an opportunity for normal and wholesome living and natural development, will be either morally or physically defective or both. A probation officer visited one of these old houses on the rear of a lot to confer with the mother of a young girl who had been arrested for soliciting on the streets. He found the mother and three younger children tying willow plumes in a small, ill-smelling room. After listening indifferently to her visitors for a while, the mother smiled pityingly and said, "Do you think that I don't know what my daughter is doing and do you think I am not glad to have her escape this in any way she can?" and she waved her hand about the room. Only such travesties of home as this could make such a travesty of motherhood. It is not to be wondered that mothers of such homes go insane, that husbands desert and children fill our reformatories. The child to whom the word home recalls

only the unattractive, crowded rooms in a miserable building that looks like all of the other miserable buildings of the street, from which he gladly escapes to find his pleasures in the street or public places, is very apt to end his career where he began it—rearing more unfortunates to a life that he himself could not escape. Visiting nurses, associated charities agents, probation officers and settlement workers may expend their time and resources in these districts, but they can do little more than alleviate the misery of today that will in some hideous form manifest itself tomorrow, so long as human beings are left to live under conditions that breed not only disease and death, but under conditions that are so sordid and so miserable that happiness and beauty and comfort can never be known, and in their places grow sodden indifference, blind despair and viciousness.

There are those that argue that the miserable conditions that we find in these old houses do not make these people, but that they, because they are subnormal, will inevitably fall down the social ladder to the pit at its bottom. But why have the pit? Why not let the social waste go to the institutions that are designed to care for it, and so remove the possibility of its breeding more of its kind and spreading its infections throughout the community? Then there are others who argue that these old houses are necessary to accommodate the poor who cannot afford better living conditions. In Cleveland a year ago, twenty families living in miserable shacks were ordered to vacate as the shacks had been declared unfit for human habitation by the local board of health. All of these families claimed that they could not afford better quarters and declared that if their houses, for which they paid little or no rent, were destroyed they could not exist. Before they were finally ejected from these houses, the associated charities was interviewed and agreed to assist them to pay their rent in better quarters in an effort to rehabilitate them. The year has passed and not one of the families has applied to the associated charities for aid and every family has moved into better houses—as they had to do because they were living in the worst hovels that the city possessed—and every family is paying more than twice the rent it had paid except one, which built a new and comfortable home. In this change several families cast off some unnecessary impedimenta, such as an insane grandfather of eighty years whom one family had refused to commit to an asylum; a tubercular friend who was sent to a sanitarium and two defective children who

were sent to an orphan asylum and one drunken husband who was forced to make a longer sojourn at the workhouse than he had done before. Many neighborhoods, like many closets, are the better off for such a clearing out and no doubt a family that has lost such a charge as some of these that had dragged it down for years, can the more readily rehabilitate itself. Former Ambassador Bryce summed up this phase of the social problem of bad housing in the sentence, "Cleanliness, health, self-respect, manners and morals, are all immensely depressed by sordid conditions, and correspondingly raised when the environment is improved."

Most of our cities, due to their rapid growth, have districts that are going through a transition from resident districts to factory and business districts. Rent from dwellings is decreasing, while land value is greatly increasing. The owners of many of these houses, foreseeing the opportunity to sell the land for business purposes in one year or ten years; will not repair or improve their houses, because they argue it would be a waste to put more money in the houses that will in themselves bring no return when selling the land. They tell you in complacent tones that imply that they think themselves philanthropists that they are asking little or no rent, just enough to pay the taxes. They fail to realize that the taxes could be paid and never missed from the unearned increment. You suggest that if they are not willing to repair these houses, that they vacate them and hold them vacant, and they are indignant that you should be so impractical as to ask them to pay taxes on property that is bringing them in no income. Yet, this same property that they paid \$3,000 for twenty years ago, they will sell for \$30,000, and in the meantime they have enjoyed a fair interest on the original investment through rent. And notwithstanding the fact that the owner is getting in rent returns only enough to meet the taxes, he has gradually increased the rent without giving to the tenant any advantages in return, for as land values have increased, the taxes have increased, and so he has correspondingly increased the rent.

In addition to this obvious injustice to the renter, is the injustice to other property owners. This injustice is manifested, first, in the failure to force owners of this type of property to comply with the existing laws. For example, in one of our growing and therefore typical cities, a railroad company proposed a high-level bridge, a contemplated interurban station as well as a long-hoped-for union

depot. The railroad company has been figuring on purchasing certain properties for five or more years, and it is supposed by hopeful property owners in these regions that the company will purchase certain other properties. In the estimation of the courts of that city, it is unreasonable or unjust for the building or sanitary departments to enforce their regulations on houses in those districts, because these houses are soon to be sold and torn down, and the court does not think that those houses should in the meantime be held vacant. One of the many results of this opinion is that fourteen families have been permitted to use and continue to be permitted to use one foul yard closet, while the owner continues to get a good rent from his houses and holds the land at three times its original value. Can the sanitary department of that city consistently require other property owners to provide one sanitary toilet for every two families as the law states? The second injustice against property owners lies in the fact that new houses have to enter into rent competition with these houses. Thus the entire housing problem of the city is complicated because real estate dealers cannot be expected to build a new and sanitary house that must enter into rent competition with these places, that are allowed to deteriorate from year to year until they all but fall upon the heads of the tenants, for the rents from the new houses must be sufficient to keep up repairs and bring a fair return on the money invested. Therefore it would be exceedingly difficult for them to compete with these houses that receive no repairs and pay no return on the investment, as that is more than covered in the increase in land value.

These old houses not only prevent new houses from being built but they have a degrading effect upon the tenants who occupy them. When people live in buildings that are not repaired or properly maintained, there is no incentive on their part to care for them, or to maintain a decent standard of living within them, nor does this inculcate in them respect for property. The tenants from such houses frequently encounter trouble when they go to occupy property that is properly maintained. Only those who have attempted to be mediators between tenants and property owners can realize how serious is the disposition on the part of a tenant to treat carelessly or destructively the property that he occupies. Recently, on the orders of a city health department, a property owner installed sanitary plumbing through a large tenement at an expense of several hundred

dollars and in less than a month's time, he invited the inspector to survey the stopped toilets, the broken water faucets, the sinks with missing drain pipes, etc. For ten years, ever since they had been in the country, the tenants had lived in miserable places with no water supply in the house and with vault closets in the yard. This landlord is paying the price of neglect on the part of other landlords, but naturally the pleasure that he might have taken by initiating these foreign peasants into the mysteries of modern sanitation, was somewhat counteracted by the size of his plumbing bill. Too much emphasis cannot be put upon the influence that the old house has upon the occupant's conception of property. Living in a house that is a source of manifold ills and discomforts to him, and a source of income without expenditure or care to the owner, creates a spirit of resentfulness that expends itself in a desire to mistrust property owners, and disregard property rights, and too often this red flame of resentment kindles a spirit of lawlessness and anarchy that is a menace to the community. Such tenants come to hold all property and all law in disrepute, and so the very real problem of the tenants' use of property and regard of sanitary regulations comes to be, and so the property owner who would prefer to give his tenants fair treatment becomes discouraged and skeptical.

The old house is the old bugaboo that all city and state legislators have paid abject homage to for years. Fair-minded real estate dealers and city planners are nailed to this cross of vested rights, and on either side of them hundreds of innocent victims are nailed to crosses bearing the same inscription. We draft new building codes, we expend hundreds of thousands of dollars to inspect new tenements to see that not in the slightest detail do they violate these codes, but what do we do about the old houses? We pass very colorless laws that demand that they be kept in a reasonable repair and that a reasonable amount of improvements be made. Let me give you an example of what is not a reasonable improvement. One city's law requires one toilet for every two families in all existing tenements, and if these toilets cannot be placed in the house, it allows the yard fixture—a fixture that has ten years ago been legislated out of existence for new buildings. A property owner who had five families using one toilet in a hall states, that there was no place for another toilet. He had built upon his entire lot, so that there was no place in the yard, and so he was told by the tenement house

department that he must use some of the space that is now used for living rooms, for toilet rooms. He took the case to court and the court agreed that the department was unreasonable to expect him to decrease the number of rooms of his apartments for which he could not receive rent for the installation of necessary plumbing. With this legal decision, we are apparently safe in assuming that the owners of the old houses comply with the requirements only when it does not inconvenience them to do so. A city official once sent an owner of property to the head of the tenement department with this note written on the order issued by that department: "Mr. —— is my good friend, and is willing to comply with any reasonable orders, but he will not spend any money on this old house." An admirable definition of what is reasonable when dealing with the old house.

Most experts agree that the housing problem will never be solved by philanthropists building model houses or renting them to tenants at a price that does not yield a fair return on the money invested. They are claiming that tenants do not want and must not be the recipients of such philanthropy. Why then, should the owner of the old house be given such marked consideration over the owner of the new house? Is not he the recipient of legal discrimination that should be far more humiliating? The old house has already paid for itself many times over. The new house has its earnings all to make. In a word, if we recognize that certain sanitary regulations are just and necessary for the new buildings, why should they not be just and necessary for the old buildings? Unequal standards, whether in the world of ethics or materials, have only worked for injustice and discontent. If the old house is so bad that it cannot be repaired or remodeled to come to a legal standard, it should, like an outgrown garment, be cast aside and not kept up for sentiment's sake. Our American cities today are cluttered with hideous, insanitary houses, with sheds and stables that depreciate property values all about them, and stand as eye sores to the community and as an eloquent tribute to the doctrine of vested rights. Single taxation would sweep away these places from our midst as vacuum cleaners would clean up the floor, but in its absence an equalizing of the requirements for old and new houses would not only remove the old, but would in return stimulate the building of new houses.

To summarize, the old house is a menace to the health, the

morals, the standard of living of tenants; it is a constant source of expense to the community; it fosters a spirit of misunderstanding between property owners and occupants; it paralyzes new building enterprises; it sets a false basis for rents that fair-minded owners cannot cope with; it fosters a lawless disregard for all property rights; it depreciates surrounding property; it defaces the city and stands in the way of the city's progress, and it is therefore a dishonest source of income. An individual who sinned so grievously against the community would be punished—why should we be so much more charitable to an individual's property? The old house, like the old sinner, should be dealt with less charitably than the new.

THE PROBLEM OF THE OLD CITY HOUSE

BY JOHN IHLDER,

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The problem of the old city house is one of the most baffling with which housing workers have to deal. Not only does the old house often present financial and structural difficulties which are serious enough in themselves, but it offers to those who would remove its baneful influence legal obstacles and puzzles in community psychology. The old house is an inheritance from a past generation, but unlike the easels that adorned its parlor in the days of its prime, it can not be put away in an attic and forgotten until some iconoclast discovers it and to the relief of every one casts it into the fire. It stays where it was built, obstinately immovable, for it usually remains a source of profit long after it has outlived the purpose for which it was erected.

The old house becomes a problem in three ways: it is permitted to run down until it individually becomes a detriment to the community, or the character of the neighborhood changes and the house—though perhaps individually up to standard—becomes less desirable as a residence, or housing standards are raised and the old house is no longer considered satisfactory. The first method of creating the problem is usually due directly to an individual owner or series of owners, the second to community changes often due to the migration of the wealthy to more fashionable districts, but not infrequently caused by lack of foresight in city planning, the third to rising standards that accompany increased knowledge of the effect of living conditions upon morals, health and efficiency.

If the houses of a city were like the tents of an army, inexpensive, easily removable, and the property of an organization interested primarily in the well-being of the people they shelter, the problem would virtually cease to be a problem. For then unwholesome houses would be scrapped as ruthlessly as antiquated machinery, the owners of which find that new and improved machinery is more economical. Were only the third of these operative the time is nearly come when such houses would be scrapped. Company

houses in the past have had a bad reputation. Whatever may be said against them on other scores, company houses are today, and will be increasingly in the future, made not only sanitary but home-like. Wide-awake employers have begun to see the advantages gained during the past by a few of their leaders who realized that it is as important, from a business standpoint, that their workers have good dwellings as that they have good tools.

This being granted the solution of the problem may seem obvious. But obvious answers usually are not the right ones, especially in the solution of social problems where it is so difficult to gather in all the premises upon which a conclusion may be safely based. The problem of the old house is due chiefly to leaving what are in great measure matters of community concern almost entirely in the hands of individuals. It is not to be solved by putting entirely into the hands of the community things that are largely matters of individual concern. Rather the solution is to be worked out by changing the emphasis. Moreover the emphasis must be different for two distinct classes of old houses; those we have now, the product of the *laissez-faire* policy of the past, and those we shall have with us in the future, the product, we hope, of a more intelligent, foresighted policy in city building. For we shall always have old houses, houses that have outlasted the purpose for which they were erected.

First, then, what shall we do with the old houses of the present? As a basis for the argument let us state that it is the duty of the community to safeguard the morals, health and efficiency of its members. For without these of what value are "those self-evident truths, those unalienable rights to life, liberty and the pursuit of happiness?" It is to promote these that we open parks and playgrounds, establish recreation centers and do a thousand and one other things for which the founders of the republic prepared us when they told the world why we should be an independent nation. Merely to safeguard these we must see that our people have wholesome homes in which to live. It is then the duty of the community to set standards below which homes may not fall, and to raise the standards as increasing knowledge shows that higher standards are practicable and are for the public good.

Such a policy will, in individual instances, entail hardship. The widowed and orphaned owners of watered stock who figured so conspicuously a few years ago have their counterparts in widowed and

orphaned owners of unwholesome dwellings. They should have sympathy and consideration. So should the man who has invested his small savings in real estate, ignorant of the fact that the successful management of real estate calls for financial resources and for as much knowledge and skill as do most other trades or professions. But our sympathy should not blind us to the fact that far more important both to individuals and to the community than the financial cost to owners are the lives and the health of those who dwell in the houses. And our consideration should not extend beyond the point of making compliance with the established standards as easy as possible.

When the deterioration of a house is due to the owner, even when he can plead poverty as an excuse, there will be comparatively little disposition on the part of the public to back his cause. A man whose inability to manage his business and who injures others should not continue in the business. Enforcing standards in such a case will not only safeguard the health and lives of tenants but will also protect neighboring property values. But when deterioration is due to changes that blight a whole neighborhood, those who can not see beyond immediate cause and effect will be more prone to think that the owner is being hardly used—until the evils of the slum appear. Then, having a more immediate instance of cause and effect before their eyes, they will forget their former ill-timed sympathy and execrate him as a spoiler of the poor.

The older parts of our cities must be accepted in large measure as they are, ill-planned to meet the changes that accompany growth. The one-time fine residence districts were platted with but the thought of meeting the desires of their then owners. The deep lots, the spacious single-family dwellings that are characteristic, become burdens when tenants of smaller means move in. They become, in the owner's view, impossible when the unskilled wage-earner succeeds the salaried man. And under the old régime the owner's view was the only view. Cheap new buildings filled the old yards, the old mansions were subdivided in the cheapest way to take in the greatest possible number of families. So the total income from the property increased rather than diminished, but the city found its bills for the maintenance of police and health departments mounting while the work for them to do constantly exceeded their resources. When at last the limit was reached the slum had become not only a

scandal, but a constant menace to the whole community. Then, too late, began the slow, costly, unsatisfactory work of trying to make bad a little less bad.

Today, with the examples of our older and most crowded cities before us, we can see the folly of letting affairs drift until they become intolerable. There is a new civic spirit which revolts at the thought that a short distance from the homes we show with pride is a slum that we can not ignore. There is a clearer understanding that no part of the community can suffer and the rest go scathless, and beyond all this is the knowledge that somewhere we must set the limit, somewhere we must draw a line and say, "Here the public good demands that standards shall be no further lowered."

That being true, where shall the line be drawn? Wherever it is drawn there will always be some "innocent" investor who has thought to make a profit by lowering standards still further, and who faces loss when he is halted. Some of the worst of New York's old double-decker dumb-bell tenements were owned by the widow, the orphan and the Italian push-cart peddler, who lived in the cellars of their barracks and saw no reason why others should live better than they. Their case was harder by far than would be that of the original owner of a mansion who moves to a newer and more fashionable part of town, renting his old home for a boarding house or sub-dividing it into apartments. So it is with him that the line should be drawn.

Minimum standards must be established that will provide for adequate open space on the lot, light, ventilation, water supply and toilet conveniences, privacy and protection from fire. With these standards established the owner may still find many uses for a property that has outlasted the purpose for which he originally designed it. And, though he may not make as great a profit on its use or its sale as if he had been left entirely to his own devices, he has no legitimate cause for complaint. He has no right to ask that the community suffer in order that he may make a profit out of a change of whim or an error of judgment. Still less cause for complaint has the speculator who, studying the drift of the city's business, holds old residence property for an expected rise in values. Heretofore he has been permitted to do almost as he would, on the score that his houses had but a short expectation of life and that improvements would not yield a profit. It is not a question of whether the

improvements will yield a profit. It is a question of the health and the lives of his tenants and of the community's welfare. If the houses are not worth keeping up to standard, then they should remain uninhabited. The well-being of the tenants is an item that must figure in the speculator's estimates.

In the case of old houses that already have traveled far down the road to the slum and must be brought up to standard, the rule is the same though the enforcement is more difficult. The city can not afford to tolerate conditions that undermine the morals, health or efficiency of its people. Even in the case of houses that complied with the standards in force at the time of their erection or of their conversion to present uses, but do not meet standards that we now know are necessary, the same rule applies—though enforcement may be even more difficult because of false sentiment on the part of the public which does not realize the vital importance of the issue. No landlord has a right to house his tenants in such a way as to endanger them. If the law has been lax and he has acted according to the letter of the law he has no reasonable complaint when the law is made more adequate and so compels him to do what he should have done of his own volition.

The right of the city to enforce higher standards than those obtaining when the conditions complained of were established was settled by the Moeschen case.¹ Mrs. Moeschen was a widow and the owner of a New York tenement house, that is, the deed was in her name but she owned an equity of only \$3,500 in the building. The tenement house department, in accordance with the law of 1901, ordered her to close the school sinks in the back yard of her building and substitute indoor water closets. The case was taken into court where it was shown that the school sinks complied with an order of the health department in force at the time they were built. It was also shown that the cost of the improvement might approximate the value of her equity in the building. Yet the courts, up to the Supreme Court of the United States, to which the case was carried, upheld the right of the department to enforce its order, designed as it was to safeguard the health of the people.

The old houses of the future will, we hope, offer us a problem easier of solution than do those of the present. Our cities have be-

¹ 203 U. S. 583.

gun to adopt housing codes, not mere tenement house codes. With a good housing code enforced the old house of the future can not become the menace that its predecessor has been and is. For a housing code covers all dwellings and it sets two standards, one as high as is practicable for existing houses, the other, much higher, for houses still to be erected. So as time goes on and existing houses pass away, as even the worst of them must, the ranks of old houses will be recruited in constantly larger proportion from dwellings that have never been permitted to fall as low as those with which we now are struggling.

Moreover there is hope for us in the rapidly increasing knowledge of city planning. With rare exceptions our cities up to the present have simply "growed" like Topsy, without thought or aim. Our cities in the future will be planned. We shall make use of the experience of the past. We shall no longer lay out new subdivisions with but the single thought of getting as many quick-selling lots as possible. If not the real estate dealer, then the city will take thought of the time when the character of the district will change. The width and direction of new streets will be a matter of community interest. The size of blocks will be figured not merely according to custom or to the convenience of the moment, but with an eye to the time when it will be advantageous to drive new streets between the original ones. The depth of lots will be based upon the possibility of future division. Then new houses may be built upon the rear of the present deep suburban lots, facing the new streets, the sites of which will have been kept free from buildings so that they may be converted at a minimum cost. Residence districts will be safeguarded from the intrusion of business and industry, which will be confined to those sections of the city best fitted for them.²

² J. C. Nichols, of Kansas City, Mo., states that "A little more emphasis might be laid upon the economic burden, in dollars and cents, that every city carries in its abandoned home districts. I have sometimes wondered if this did not amount to several hundred million dollars a year. For instance, I believe in many western cities, this loss is several million dollars a year, and taking it all over the country, it certainly is enormous. Perhaps when you consider this phase, it impresses a little more strongly the importance of protecting residence districts from the intrusion of business and industry as you suggest, and will lessen the number of old houses which give the occasion of your argument."

So we shall have greater elasticity in our future cities and at the same time greater stability. When it is practicable to utilize the backs of deep lots in a wholesome way one of the greatest temptations to bad old housing will be removed. When it is possible to protect a residence district from the intrusion of the business and industry that have so often blighted them, there will not be so many old houses converted to uses for which they are ill-fitted. Then the problem of the old house will have become comparatively easy of solution.

SOME EFFECTS OF HOUSING REGULATION

By JOHN J. MURPHY,
Commissioner, Tenement House Department, New York.

The growth among ordinary people of the perception that the municipality owes a duty to its citizens, is one of the most conspicuous signs of the times. The preponderance of the city as an important factor in national life is of very recent date. Intensive living develops the need for civic interference in directions which in the past have been deemed to be fields of purely private activity. In no direction has this tendency been more obvious than in the regulation of private housing.

Like the individual, the community which turns from evil and careless habits into a better path, finds the road strewn with unsuspected obstacles. One of the first that becomes manifest is, that when an agitation arises for the enactment of regulative legislation, and when such legislation seems to be on the verge of realization, there is an overwhelming rush to file plans for the erection of buildings before the new law becomes effective, in order to evade compliance with the new statute.

The new restrictions are apt to provoke in the minds of capitalists and builders a defiant attitude, and the assumption is very freely voiced that houses built under the new conditions will not pay; hence for quite a considerable period there will be almost an entire cessation of new buildings. The consequence of this condition is that the value of old and unsanitary houses is increased, with the result that for several years the beneficial effects anticipated are not realized.

Out of respect for the rights of owners of property, the law is always tender about interfering with existing conditions and consequently existing tenements are permitted to continue to occupy a percentage of the lot greatly in excess of the requirements made by the new law; they may have windows which do not open to the outer air and many other conditions which are specifically condemned so far as new houses are concerned. Tenement owners take the ground, and it is impossible to deny its superficial justice, that there were

building and tenement laws of some kind in force at the time when they erected their houses; that they complied with such rules and regulations, and that therefore there is a tacit contract by the community with them to permit them to occupy such houses for the period of their normal existence. It is further contended that only on such condition will anyone build at all. The contention is sometimes raised, that if the moral perception of a community advances to a point where better living conditions are required by public opinion, the public should contribute to the changes required to be made.

The New York tenement house law enacted in 1901 marked a great advance in the construction and arrangement of new tenement houses. It contained requirements for light and ventilation, which many builders and owners then regarded as confiscatory. Added to its requirements for light and ventilation were stringent requirements for fireproofing. The plumbing requirements, moreover, and the general arrangement and construction tended to increase the cost of the building. The change from old to new conditions was necessary, however hard it was to comply. Thousands upon thousands of tuberculosis victims could testify that it had been too long delayed. Fortunately the new law contained many restrictions in regard to old buildings, which, while primarily intended to improve the living conditions in them, also rendered the initial cost of a new building only reasonably greater than the value of an old one of similar size which had been made to comply with the law. In spite of this fact a temporary cessation of tenement building followed the enactment of the law, during which time the value of the old buildings rose rapidly. The law was enacted in April, 1901. Almost no tenement houses were erected during the balance of the year, and only 562 were erected in 1902, most of which were of the smallest type.

Owners soon discovered, however, that the cost of complying with the law in regard to the old buildings was considerable and values began to decline. They soon discovered also that the vacancies in new law houses were very few, compared with the vacancies in old law houses, and that the old buildings lost tenants when a new tenement was erected in any neighborhood. Every new tenement house erected under the provisions of the new law became an educational object lesson to persons living in the neighborhood.

People who were not possessed with sufficiently vivid imaginations to understand the written descriptions of conditions which the law required, and thought they were either oppressive or unnecessary, became convinced of their wisdom, when the realization in bricks and mortar was brought before their eyes. Thus a steadily increasing demand for new tenements arose. More than 22,000 new law tenements have now been erected in the city; nearly a billion dollars has been invested in them in eleven years, and almost a million and a half people live in them. It is safe to say that this gratifying result has been accomplished largely by the preservation of a sort of balance in values. Only in this way can the problem of rents be met when changes in building laws are made. So long as the values remain relatively unchanged, the demand for the better housing conditions afforded by the new type of houses will increase and will eventually predominate.

It has been the custom for many years in certain foreign cities for the municipality to tear down old unsanitary tenement houses. The work of the London county council is probably the most notable example of this procedure. There the city condemns a large slum tract, tears the buildings down and erects new sanitary dwellings upon the site at its own expense. The advantages of this method, however, are counteracted even there to some extent by the hardships produced through tardiness in replacement. Hundreds of people are practically left homeless when a slum area is demolished, and statistics show that the process of rebuilding is far from keeping pace with that of demolition. There is, furthermore, a certain harshness about this procedure which seems to be somewhat repugnant to American legal principles. This method is also open to the objection that a municipality can rarely acquire property at reasonable figures, the cost of condemnation being usually 25 to 50 per cent greater than if the same property had been acquired by a private citizen. Therefore, it usually happens that if the city condemns a slum area and erects sanitary houses thereon, and then attempts to charge rents which will pay a reasonable return upon the amount invested, the poor can no longer occupy such houses. The experiment of demolishing old unsanitary tenements was tried several years ago in New York City by the board of health and proved to be a failure, mainly because of the attitude of the courts.

The gradual elimination of old tenement houses through changes,

which not only improve them but which also place a check upon their value, has much to be said in its favor. The summary harshness which results from condemnation and demolition is thereby removed. The owner does not experience a serious loss by being allowed to rent his old and partly unsanitary building. He simply obtains a smaller revenue from it through rentals than he would receive from a new and better building. He is also obliged to spend something in repairs or alterations, and if his property decreases in value he knows that he cannot expect his building to be the equal of the newer type.

It may not be out of place to comment here upon the effect of our present system of taxation upon the replacement of old houses by new ones. We now tax at full value improvements as well as sites. Naturally, as the old buildings deteriorate, the assessors tend to lower their values, so that the owner gets some mitigation of the loss which he meets in having to accept lower rents. If the old building is demolished and a new one erected, his tax bill rises much more proportionately than would the increase in his revenue. It is therefore hardly open to question that a taxation on improvements in real estate tends to prolong the life of an old building and to retard the erection of a new one.

New York's new tenement house law has now been in effect a little more than twelve years. The old law tenements have so far held their own to a large extent. Modern standards of housekeeping have advanced rapidly, however, and this fact coupled with the number of new law tenements that have been erected will shortly result in the demolition of many of the old type to make way for the new. The same thing has happened in the case of many business buildings in the city. It is not an unusual sight to see a business building, erected only a decade ago, being torn down to give place to a new structure in keeping with modern demands. In the same manner, as soon as the old tenements have become sufficiently unpopular with tenants, wholesale demolition or reconstruction is bound to follow. That time is not far distant in New York City. The light rooms, the fireproof halls and stairs and the baths in the new law houses are now eagerly sought out by prospective tenants. Few of the old law houses contain baths; in many cases the toilets are in the yard, and owners of such buildings state that they already have the greatest difficulty in renting their apartments. The process of

eliminating the old buildings is now not one of law but of competition, which is both surer and speedier in its results. This stage would doubtless have been reached years ago but for the long period of litigation regarding the tenement house department's power to order the removal of school sinks and privies from the yards of tenement houses. While this litigation was in progress, few of the important alterations required by the tenement house law were made. During that period the status of old buildings was only a little better than if the old tenement house law had still been in effect. The new buildings were therefore temporarily unable to compete with the old from a financial standpoint, the difference in rentals being too great.

There is much to be said in favor of the contention that in the present stage of our municipal development, municipal regulation of housing is better than direct municipal operation. It seems hardly to be doubted that, were the city to go into the provisions of housing for its citizens on a large scale, it would serve to check private investment of the same character, and thus tend to create a worse rather than a better condition. There seems to be no lack of capital to provide adequate housing in any city, provided site values have not reached a prohibitive figure. When the city enters into competition for sites within its own area, it tends to enhance their values rather than otherwise, and in this way also tends to defeat its own object.

FIRE WASTE

BY POWELL EVANS,

Chairman, Fire Prevention Commission of Philadelphia and
Fire Waste Committee of the Chamber of Commerce
of the United States of America.

Fire waste is as old as life. It has always been considered measurably necessary. Its cost has for many years—virtually throughout the civilized world, without limit even to national boundaries—been distributed as a burden upon all the people through the medium of fire insurance. There is a marked difference in the amount of this waste, measured per capita or on an insurance basis, between different nations, as well as between groups of nations. On the average the cost of fire waste and insurance in western Europe is about one-tenth that in North America, due mainly to better building construction, more intelligent control of occupancy, thriftier habits of the people and better governmental regulation of the entire subject abroad.

Until quite recent years the real causes and corrections of fire waste with us have been clearly known and understood only by the relatively small circle of fire insurance underwriters and their associates. About ten years ago the plan of a state officer empowered to investigate and regulate fire waste was first adopted in Massachusetts. By 1906 about half a dozen other states had followed suit. During the past five years there has been a marked awakening throughout all circles of the country concerning the size and character of fire waste in life and property, and the fact that it is in large part needless and preventable. During this time forty states have installed fire marshals (or other officers with similar powers), and many municipalities having realized that the bulk of this danger and loss was in their congested areas, have begun to exercise police power more freely and intelligently through varying agencies to control and abate it. Of late, especially, civic and commercial bodies are recognizing their stake and responsibility in the matter, and are beginning with fast growing understanding to take a determined hand in bettering fire waste conditions. Insurance which distributes the cost of fire waste is so much a part of the whole question that it must now be briefly reviewed.

The insurance world as a whole has, in physical and engineering research, rendered magnificent assistance in working out the problem of fire control. As a business proposition of conducting commercial fire insurance underwriting at a profit—insurance is procurable on properly located, constructed, protected, occupied and managed property in America at low final cost—on the one hand from the factory insurance associations (groups of certain stock insurance companies), and from certain individual stock insurance companies which specialize in the insurance and reinsurance of such selected risks, at low fixed charges; and, on the other hand, from the associated factory mutual fire insurance companies (mill mutuals) on low mutual charges determined by the final net coöperative loss.

Much farm and village property is insured in numerous small rural mutual companies throughout the country. The mill mutuals operate through a central inspection bureau, aided by a laboratory for the study and determination of physical standards—both in Boston. They, as well as the stock factory insurance associations, are specially active in spreading the doctrine of fire prevention in all its phases and hence are able to conduct continuously profitable underwriting at net final charges of from five to ten cents per \$100. Such insurance is all done without commissions to agents and brokers. Insurance in the United States covers about \$35,000,000,000 of property—about 80 per cent of which is stock insurance averaging a rate of approximately 1 per cent per annum.

The bulk of city property is stock insured at flat rates. These rates are determined by the application of an automatic universal rate schedule, based on the ideal building for its respective occupancy on an ideal location, which is modified by the local rate conditions, fixed by the local stock underwriting board having jurisdiction, and further modified by the conditions of the property itself, ascertained through surveys by the same local board.

Many of these local boards have, especially in recent years, displayed commendable interest and energy in broadcasting fire preventive doctrines; and the active managers of these have welcomed the submission of plans for construction and reconstruction of buildings in advance for criticism as to fire prevention and protection—all of which is admirable work. Others, however, are so influenced by the agent and broker element in their membership as to be indifferent to this aim.

The total personnel of all these interweaving boards is so great, however, and the views and purposes so varying, that no fixed general policy is yet in evidence on their part as a whole to exercise their best knowledge, experience and influence to prevent fire waste to the practical limits possible.

The National Board of Fire Underwriters (New York) is the stock body which speaks for the policy of the stock insurance interests. It operates the Underwriters Laboratories, Inc. (Chicago), for the detailed physical study and determination of fire appliances (standards of appliances,) in general coöperation with the Mutual Laboratory (Boston); and does much good publicity work.

The National Fire Protection Association, which numbers in its active membership all the stock and mutual boards, bureaus, associations, etc., as well as a large and growing number of engineering and trades associations of national scope, combines the general engineering opinion of the country on the physical facts relating to fire danger, and formulates the standard rules and requirements (standards of practice) to control fire hazard of every description promulgated by the National Board of Fire Underwriters for the guidance of its associated local boards. Copies of these standards are procurable by any one from these bodies.

The National Fire Protection Association is the best equipped organization in existence today in experience on the subject of fire waste and its control, and the most altruistic and progressive of these formed in large part of insurance representatives. It is growing more and more representative of all the interests of the country touching this problem. It has been an active force in the past in spreading the general doctrine of fire prevention and promises in the near future to become a much more effective influence in this propaganda.

The twenty-five odd state fire prevention associations in as many states, composed almost entirely of insurance personnel, are also doing excellent work in fire-preventive inspections and public education.

So far in this country almost every fire safeguard has been a matter of voluntary adoption. Too much liberty has been left to the individual about constructing, protecting, equipping, occupying and managing property—to suit his greed, ignorance, indifference, or shiftlessness—thus permitting a frightful loss in life and prop-

erty, resulting in a constant heavy and largely useless waste in both to the whole people.

The bulk of insurance influence to date has exerted itself in: (1) A protest in general terms against fire waste; (2) the preparation of physical "standards" usable to control the evil; (3) a system of underwriting which as a rule penalizes bad conditions only by charging a high rate on such bad conditions, which are discovered by constant inspection, and limiting the amount of such risks written. Most of the bulk underwriting is done through agents and brokers, now claimed to be too highly paid and inadequately regulated, whose influence is baneful to the extent that both on the average are merely eager to do the largest business at the highest commission, and hence are not interested in property loss as owner or insurer.

Losses when they occur are usually settled through adjusters, who also need more regulation—as recent arson cases in New York and Chicago have disclosed. In the main the aim of the large majority of insurance underwriters is to make their business profitable. This end is best attained by collecting the largest gross premiums and saving at least half of these by skillful business management—the method being a continued process of leaving property largely as it is found or alleged, charging the highest obtainable rate, distributing the risk, paying good agents and brokers liberally for securing such contracts (averaging over 20 per cent of the gross premiums) and taking chances on fire loss, without any special provision for the life hazard.

Such is the bare outline of the machinery, physical and commercial, which insures property against fire in America. Almost all we know about the physical engineering control of fire danger has been originated and brought to its present perfection through the medium of insurance engineers. It is enough at this date if sufficiently widely known and applied to be fully 90 per cent efficient, hence we should now center our attention on applying it adequately. It must be clear why under these loosely controlling conditions we have so much fire waste of life and property in America. How can anyone question the conclusion that society should now fully measure and reckon with this common and largely controllable danger to life and property, and sternly and effectively take the situation in hand all over the country through appropriate legal regulation, both for humanitarian and economic reasons?

Substantial relief from this danger can be brought about in any state or city by any group of men, or almost by any one man, who will devote time, money, purpose and intelligence to this end.

It is pertinent here to briefly review recent history on this subject in Pennsylvania and Philadelphia to make this point clear, although this closely touches my own activities.

Starting actively on the problem here early in 1911, I have been able by gradually disseminating correct information, creating interest and winning support of individuals and organizations, to procure the passage of legislation in its present effective form establishing the offices of Pennsylvania state and Philadelphia city fire marshals and to completely reorganize the operation of the latter office so that it now does efficient work through the agency of the Philadelphia fire prevention commission.

The Philadelphia fire marshal now has the use of seventy-five active firemen, whose time was formerly absolutely wasted, who inspect and re-inspect about three hundred buildings per day and all the theaters in accord with an absolute continuous system. They have within six months corrected over 60,000 fire-breeding conditions and all of this work has been done to the distinct betterment of fire danger to life and property in this city.

As this work in Philadelphia, planned and initiated as above described, progressed we found much valuable data and experience procurable from a few other progressive states and cities in the country. It was evident, however, that the great bulk of the country was scarcely awake to the known means whereby nation-wide actual progress in fire waste control could be effected, and only touched the high spots in their solution of the problem—and these not in common. As the cost of insurance is admittedly a nation-wide tax, based on the average of the total fire waste of property and associated expenses, including the cost for public fire protection, it is obvious that there must be a nation-wide reduction of fire waste if the insurance cost is to be reduced, and further that loss of life and health, and from business interruption arising from this cause, can only be lowered by reducing the property loss. The United States Geological Survey, *Bulletin* No. 418, 1907, on "The Fire Tax and Waste of Structural Materials in the United States," as well as the annual reports of the National Board of Fire Underwriters during the past five years, provide the best summaries of this waste; which

is now estimated at \$300,000,000 per annum, or, including associated costs, \$450,000,000 per annum—the lower figure averaging a charge of \$3 per capita per annum upon every man, woman and child in the country, distributed throughout everything they use in life.

Admittedly a legally enforced policy of fire prevention and protection all over the country would attack the source of fire waste; and would save, according to the soundest judgment, from one-half to two-thirds of this loss in life and property within the life of most of the people now living. This is the most important avenue of improvement in life and property loss from fire, and of reduction in insurance cost. The further possible reduction in insurance cost derivable from lowering the expense of doing business by the reduction of the extravagant commissions paid for selling insurance contracts can only be referred to here.

Fire, the cause of all this trouble, is always local in origin. Under our governmental system the state is the unit of local control and can in turn regulate its cities and country districts; and so we must look to a sum total—uniform as nearly as may be—of state action, imposed in turn over all of the area of each, if we are to eliminate the bulk of American fire waste. Progress in this matter in a few states and cities does not bring reasonable or adequate relief. Large and wide betterment must be achieved to produce an average proper reduction in life and property waste, and in the cost of insurance and public fire protection.

Has not the time come, however, for the national government to do a great service to the country by collecting the total studies on fire waste, prevention, protection and insurance, and formulating these suggestions and conclusions for use by the country as a whole?

While every fire is local in its origin, the sum total of all fires, or fire waste, is certainly national in effect; and the necessary method of collecting this tax through the virtually semi-public function of insurance underwriting and the insurance policy contract constitutes a truly national problem with us at this time.

I quote in conclusion on this point from the Illinois fire insurance commission:

“From nearly every standpoint fire insurance seems to be inter-state in its nature, perhaps more nearly so than any other business. It is based upon averages and distribution, and if we take into account large conflagrations neither average nor distribution can be intelligently applied within the limits of any single state.”

RURAL HOUSING

BY ELMER S. FORBES,

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Massachusetts Civic League.

Rural housing is here taken to mean the housing of that portion of the community which gets the larger part of its living directly from the cultivation of the land, viz., the farmers; together with a few others, like the country minister, the store-keeper, the cobbler, the blacksmith, who may be farmers in a small way and whose manner of life in any case is substantially the same as that of the farmers among whom they live. The subject is restricted in its application to the older settled parts of the country. No attempt is made to deal with conditions as they exist in some sections which have lagged behind the general social development of the time, nor in those which are still in the pioneer stage or which at best are but a short remove from pioneer days.

Rural housing as a whole exhibits the same differences, the same degrees of excellence as does the housing of the towns. There are numbers of farms where the dwellings are well built and provided with modern systems of heating and lighting and with every convenience for the economical despatch of the work of the household, where the barns and outhouses are well kept and clean, and where the sanitation is all that can be desired. At the other end of the scale there are to be found here and there in the country single houses or small groups of houses which exhibit many of the characteristic marks of the slum. Not all, for in the open country at the worst, there is plenty of fresh air and sunlight and space; but there are dirt and filth indescribable, the most primitive sanitation, serious overcrowding and indecent promiscuity. These slum spots exist not only in remote districts far from the railroads in the backlash of civilization, but close search will find them in many communities where they would not be expected and where their presence is known to but few, on narrow country by-ways and lanes, in wild places in the vicinity of the railways, in neglected woodlands; indeed, there is scarcely a hamlet or town within whose limits these disreputable shacks may not be discovered.

Two or three cases may be instanced by way of illustration. The family of a small farmer on the outskirts of a country village was found living in a one-roomed log cabin in utter disregard of the ordinary laws of health and decency. As a consequence, two of the children had been attacked by tuberculosis, and unless immediate action were taken there was every reason to believe that all would become affected. Another such family lived in a dilapidated combination of dwelling and barn, not fit to be the habitation of either cattle or human beings, where the overcrowding was equal to that in the most congested districts of the cities and all sanitary conveniences were conspicuous by their absence. As an example of a still lower type there may be instanced a degenerate group of four men, two women and three children who occupied a shack in a clearing of the woods in the neighborhood of a New England town until they were finally dispersed by the authorities.

Such cases can be duplicated almost anywhere. In all of them, with scarcely an exception, the housing conditions are vile, the equal of anything in the slums of the towns, and yet in the opinion of the writer the problem which they present is not essentially one of housing reform. In this respect the particularly bad housing of the rural districts is quite different from that of the towns. City slums are due in large measure to land and building speculation, the utilization of land for dwelling house sites which is too valuable for this purpose, an inequitable system of taxation, the lack of any housing law worth the name, inadequate supervision, and a disposition on the part of some landlords to exploit their tenants. These are causes which are in no way connected with the character of the families living in the slums, and their operation can be checked by right legislation honestly enforced. Germany is an example to the world of what can be done in this way. One of the most remarkable features about many of the German cities is the complete elimination of the slum. It does not and can not exist in the face of the effective legislation against it, and by the same kind of legislation it can be driven out of American cities whenever the people so desire.

The slum spot in the open country, however, is not so much due to social or economic causes beyond the control of the occupant as it is to his own mental and moral deficiencies. Land speculation, speculative building, methods of taxation, the greed of landlords, none of these in most cases, has anything to do with it.

Such dwellings are the natural expression of the lives of the shiftless, feeble minded, immoral, drunken or criminal people who inhabit them. It is not a better housing law which is required here so much as it is the labor colony, the penitentiary, the almshouse and the home for moral imbeciles. These social plague spots are the cause of enormous public expense and are a steadily increasing burden upon the industry and thrift of the community. They should be accurately registered, carefully studied, and each one should be disposed of upon its own merits. All this will cost much effort and money but not a tithe of what it will cost twenty, thirty, or fifty years hence, and incidentally it will wipe out the country slum.

Thus neither the best nor the worst housing in the rural districts is in need, as such, of special attention. But between the best and the worst there is a great deal of existing housing which is susceptible of improvement, the like of which should not be permitted in the future. In a great many farm houses the occupants are not safe from fire and in many more the sanitary arrangements are extremely defective. Every year lives are lost in the destruction of farm houses by fire, which would not happen if the proper safeguards were provided. After a few experiences of this kind we might suppose that something would be done to prevent such accidents in the future, but when the holocausts of the cities have no effect upon the public conscience it is, of course, too much to expect that the loss of a single life here and there will attract any notice.

But the case is different with defective rural sanitation. The disposal of the waste products of the body and the household is a much more serious matter, and mistakes are dangerous to a very much larger number of people. Dr. W. C. Stiles, of the U. S. Marine Hospital Service, states that of 3369 farmhouses in six different states 57 per cent have no privies of any kind. The better grade of farmhouse is always provided with some sort of sanitary convenience, but the number where it is anything more than the ordinary outdoor privy is comparatively small. The neglected privy is the greatest danger to the health of the farming community, and a menace to the population of the towns through the part which it may play in the contamination of the milk, vegetables, and fruits sent to city markets. It defiles the soil around it, and unless carefully located may pollute the family water supply. The fact is so generally known that it is not necessary to give statistics showing

that serious epidemics have been started by the use of water from country wells polluted by the disease-infected privy. It is the breeding place of countless generations of flies, and when used by persons suffering from any kind of infectious disease, as fevers, dysentery, diarrhea, and the like, the contagion may be spread far and wide by their agency.

The family cesspool is but one degree less dangerous than the outdoor privy, and together they have undoubtedly been responsible for a vast amount of sickness and death. Accurate statistics on this point are not available, and perhaps never can be, but the records of outbreaks of infectious diseases and the studies of the transmission of contagion by flies and insects have established the fact beyond dispute, that carelessness in the disposal of human and household waste has resulted in the destruction of thousands upon thousands of valuable lives; and still this appalling and preventable slaughter goes on.

Besides these glaring defects in country housing, danger from fire due to unsafe construction and the serious menace from bad sanitation due to carelessness and ignorance, there are other objectionable features, of secondary importance, it is true, but which nevertheless have a marked effect upon the health and happiness of the people. Great numbers of farm houses have few of the conveniences which have become necessities in these modern days, no plumbing, no bathroom, no water in the house, no central heating apparatus, no lighting except the lamp or candle, and little or none of the machinery in the kitchen, the laundry and the dairy which lighten so much the work of the housewife. The lack of these comforts and conveniences entails hard and unremitting labor upon the women of countless households, often seriously affecting health and breaking them down before their time. It is needless to say that there can be a perfectly wholesome family life without electric light and a furnace, but rural housing will not be what it ought to be until all country dwellings have at least the minimum essentials for the saving of time and strength in the performance of the daily work of the household, as they are now provided in the best type of houses on prosperous farms.

Of course these are matters which at present are beyond the reach of the law. No housing code can prescribe that every house shall be provided with stationary washtubs and a gasoline engine for

pumping water, but all who are interested in the improvement of country living conditions should look forward to the time when at least the necessities for comfortable living will be included as a matter of course in the equipment of the country dwelling. It cannot be done today, nor will it be possible until the economic condition of the farmer is much better than it is at present. This last is the fundamental prerequisite for securing these features of the best country housing. The state can demand that from the viewpoint of fire risk dwellings shall be made safe for their inmates, and it can insist that rural conditions shall not endanger the health of the community; but anything more than this, such as the installation of bathrooms and washing machines and power churning, and the like, must be conditioned upon the ability of the farmer or country householder to pay for them; hence the improvement of rural housing is bound up with the whole country life problem; solve this and you secure the other.

It is sometimes charged, with a show of reason, that social reformers are strangely blind to the causes which produce the evils they are fighting, and so do not apply their efforts where they will do the most good. For those who are working for better country housing to lay themselves open to such criticism would be fatuous in the extreme. On the contrary, they should be close students of the needs of country life and deeply interested in all that makes for rural progress; otherwise they are no better than a medical specialist who gives his treatment without reference to the general health of his patient.

Ex-President Roosevelt diagnosed the needs of rural life as "better farming, better business, better living." The farmers as a class have not kept up with the times. Great advance has been made in the application of science to the processes of agriculture, but the average farmer is very slow to adopt new methods. He is apt to think that what was good enough for his father is good enough for him and continues in the old ways. Furthermore, in almost every line of business except farming, there has been a large reduction in overhead expenses through combination. The farmers of Denmark and Holland have developed coöperation in the marketing of their products most successfully, to the mutual profit of both themselves and the consumer, but not yet has this been done to any such extent in the United States. Apples, for instance, have been selling in

city markets for a dollar a bushel while fifteen or twenty miles away great quantities have been rotting on the ground, to the mutual loss of both the farmer and the consumer. Better business management would find a remedy for such a condition. Better living means less isolation and a better social life, better amusements, better education, a wider outlook, a larger influence in affairs. Not until there has been improvement in country life in these directions can rural housing become what it ought to be; consequently every one who hopes some time to see the country dwelling made comfortable, convenient and safe in all points, should apply himself to the fundamental, underlying problem of making the farmer economically able to satisfy these conditions.

Certain requirements, however, for safety and health should not wait upon this somewhat distant consummation. The country householder, landlord or owner, should be compelled by law to provide the minimum essentials of decent and healthful living: well lighted rooms of reasonable size, privacy, freedom from overcrowding, protection against fire, and proper sanitary conveniences inside the house wherever possible, or if they must be out-of-doors then so constructed as to safeguard the health of the community. It should not be difficult to secure this measure of rural housing regulation, for the interests which oppose similar regulation for city and town have little influence in the more sparsely settled districts of the country.

The construction and maintenance of cesspools and out-door privies should be according to law. Stiles remarks that "a compulsory sanitary privy law or ordinance should exist and be strictly enforced in all localities in which connection with a sewer system is not enforced. Since from a sanitary point of view, the privy is a public structure in that it influences public health, it seems wisest to have city and town ordinances which provide for a licensing of all privies, the license being fixed at a sum which will enable the town or city to provide the receptacles (tub, pail, etc.), the disinfectant, and the service for cleaning. The expense involved will vary according to local conditions and density of population. The importance of taking the responsibility of the care of the privy out of the hands of the family is evident when one considers that one careless family in a hundred might be a menace to all.

"It is probably the exception that an economical public privy cleaning service can be carried out in the open country, on account

of the distances between the houses. To meet the difficulties involved several suggestions may be considered, according to conditions. A county privy tax can be levied, the county can furnish the pail and the disinfectant, and one member of each family or of several neighboring families hired to clean the privy regularly; a landlord can be held responsible for the cleaning of all privies of his tenants, receiving from the county a certain sum for the service; a portion of the county privy tax might perhaps be apportioned by school districts and distributed as prizes among the school boys who keep their family privies in best condition; each head of a family might be held responsible for any soil pollution that may occur on his premises and be fined therefor."

Both the construction and care of cesspools and privies should be under strict supervision, preferably of the state boards of health. As a rule country local boards cannot be depended upon for this service. They have neither the knowledge nor the training which would make them useful inspectors. Furthermore, the enforcement of sanitary laws upon one's friends and neighbors is a thankless and unpopular duty and it cannot be expected that it will be done efficiently. The public welfare demands that it be put into the hands of the state boards of health, whose agents can do their work without fear or favor.

These two measures, securing the essentials of healthful dwelling house construction and sanitation, represent the maximum improvement in rural housing that now seems possible. A further advance in the direction of comfort and convenience, including the installation of labor saving devices, will follow a rise in the general economic ability of country life.

RECORD KEEPING AS AN AID TO ENFORCEMENT

BY KATE HOLLADAY CLAGHORN,
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The American public, having lately acquired the idea that social ills may be reached by legislation, has taken up the idea with such enthusiasm that the one thing immediately proposed when some special difficulty is brought to our attention, is to "pass a law." And the same enthusiasm, trickling through to legislatures, enables the said "law" to be passed with ease. Unfortunately, public attention seems to flag at this point. Having attained the immediate object, which in itself seems a wonderful advance upon our ancient tradition of individual responsibility, everything is thought to be accomplished.

As a matter of fact, the passing of the law is the beginning, not the end of a process of social remedy. It is merely the establishing of conditions for a social experiment. However carefully any matter of social reform has been thought out, it is impossible to lay down beforehand exactly the means to attain it, or to prophesy exactly the reactions that will take place for good or for ill, or the hindrances that will arise, in the complex conditions of our modern civilization.

But what would be thought of the chemist, who, after combining the elements of his experiment, cheerfully turned his back on them, leaving them to form the expected compound or blow up, as might happen!

Yet something of this sort is constantly being done by us. With regard to housing legislation there is one good reason for this procedure in that while housing evils are widespread throughout the country, and in communities of every size, housing laws, of any thoroughgoing description, have been enacted for only a few localities, mostly the larger cities, and in most of these so recently that the experiment may be said to be only just under way. In one case, however, the need of continued watching of the experiment was foreseen. That was in the New York City tenement house department organized in 1902 to carry out the provision of the tenement house act of 1901.

The method of testing an experiment is by observing and recording its results. And this was provided for in the tenement house department by the establishment of a bureau of records to collect and classify such observations.

It is obvious that a law will fail of its purpose, first, if not properly administered; secondly, if it does not meet new and unforeseen conditions that come to light in the course of its concrete application.

Altogether too little attention has been given to either of these points. If it is thrust upon public attention that a certain law is a failure, the only thing thought of is that it has been administered by "rascals" and the "rascals" must be "turned out." There is not usually much concrete evidence of bad administration available, or anything to show that the difficulties really arose from conditions of the problem itself, as is sometimes the case. Evidence along these lines the bureau of records of the New York tenement house department was organized to furnish, as well as to prevent bad administration and imperfect enforcement. The system adopted was devised by Mr. Lawrence Veiller, then first deputy commissioner under Commissioner Robert W. de Forest, and its usefulness has been proved by the fact that, throughout twelve years of changing administration, it has been found necessary to retain all of the essential features of the original scheme.

For the principal set of records the card system was adopted on account of its readiness of reference and general adaptability. A record was started for every building in the city under the jurisdiction of the department, and the plan was extended to include, for some particulars, the other buildings. Of tenements alone there were over 80,000 at the time of organization of the department; by 1912 the number had increased to over 103,000. These cards were filed according to street and number so that all the facts about one house could be found in one place, and the cards were of different colors for different sets of facts. One set consisted of the original reports of inspectors on conditions found in their inspections. Yellow cards were used for such reports. The tenement house law of 1901 is mandatory, prescribing in considerable detail what shall be done. For inspections to determine how far buildings conformed to the conditions prescribed, printed forms (cards 5 by 8 inches) were devised, indicating the conditions to be noted, with blank spaces to be filled with a check mark to show that the condition indicated

existed, or with the word "Yes" or "No," or with a measurement. One form dealt with points to be noted in inspection for structural conditions in tenements built before the passage of the act; another, for structural conditions in newly built tenements. All new tenements are thoroughly inspected in course of construction and, when completed, comply with the law. The "new building" card is made out, however, to give a convenient record of its structure so that subsequent alterations may be detected, if any are made without filing plans with the department. Another printed blank card dealt with sanitary conditions, another with fire-escapes, another with basements. Each covered some important branch of the department's work, prescribed in certain sections of the law.

These cards are filled out in the field, by the inspector, and signed by him, so as to fix responsibility for the accuracy of the statements made. These printed blanks have several advantages. One is the saving of time in making out the report, a large part of which is printed on the card. Another is that the report is made in the same order by each inspector and the results may be clearly seen and compared. Still another is that, with a printed list of things to look for and to check as present or not present, the inspector is less likely to overlook anything and may be held to stricter accountability if he does so. To report conditions not provided for in any printed form, an unprinted yellow card is used, also signed by the inspector.

These cards when filled in are forwarded from the different bureaus of inspection to the bureau of records where there is no possibility of subsequent alteration by the inspector.

The primary use of these records is as a basis for orders to owners to remedy conditions in violation of law, and as evidence against owners in case of a suit. They are also useful as a check upon the work of the inspectors. In case the same or another inspector makes a subsequent inspection of the same premises, the results may be compared and inaccuracies or attempts at fraud may be discovered.

Another set of cards (white in color) gives a summary of the exact order issued to the owner. As fast as any portion of an order is complied with, that portion is crossed off the summary. So that at any time may be seen just what the owner of a given house is legally liable for, and what work he has already done. This portion

of the record is much used as a source of information by persons dealing in tenement property, to adjust prices equitably according to the amount of obligation for repairs, and so forth, attached to the property at a given time. Other city departments with a less modern system of records require from a week to ten days to give out such information; the tenement house department will furnish it in twenty-four hours. These "searches" as they are called, are in themselves a valuable aid in enforcement. If a buyer finds a building heavily encumbered with "violations" he presses the seller to comply with them before the sale, which the latter usually hastens to do. These white forms are kept permanently on file in the bureau of records, but inspectors are given duplicates of them for use in reinspection. These duplicates, between reinspections, are themselves kept in a separate file.

Still another set of cards belonging to the main file in the bureau of records are those recording deaths, cases of tuberculosis, and cases of contagious disease other than tuberculosis, as they occur, in tenement houses. These are chocolate color, buff and pink, respectively. The general purpose of these is to correlate housing conditions and health conditions. Their immediate use in departmental practice has been to indicate houses where special inspections should be made. The reporting of a death or case of disease which brought the number above the ordinary, was the signal for an immediate, careful inspection, to remove any illegal condition that might have contributed to the unusual death or sickness rate. This set of cards also affords a basis for a study of the causal relation between housing conditions of different sorts and health, which would be most valuable as a guide to further legislation, or possible modification of the present code, with sufficient material and sufficient time to work it out. Up to the present time, however, the records have not been thoroughly studied in this light.

All the cards for each house are preceded in the main file by an index card, blue in color. On this card are entered, from reports forwarded from different divisions, the dates of complaints and their serial numbers, the fact that inspections of different kinds, indicated by symbols, such as "I" for structural, "U" for sanitary, and so on, have been made, date and serial number of orders issued to owners, date of dismissal of orders, serial number of plans filed for new buildings and alterations, with dates of filing, approval and issuance of

certificate of completion, date and serial number of permits to occupy basement, date of replies to requests for information as to violations, and such other items of information as are needed in department procedure. This index card thus affords a bird's eye view of the entire history of a tenement house, so far as the department has been concerned with it. It also, and this is an important feature, provides a list of the other card records which should be on file. The inspector's original report cards, kept in the file, are numbered to correspond with the violation orders which are based upon them, and also have a serial number of their own. The white cards, summarizing the violation orders, also bear their respective violation numbers. These numbers again appear on the blue index card as a record of action. Every number shown on the blue card then, referring to a violation order calls for two cards in the file,—an inspector's report card of some sort and a summary of the order. In like manner, every number on the index card refers to some report or paper concerning the house, which should be on file. This system of checks makes it extremely difficult to tamper with the records successfully for the sake of destroying evidence or for any other reason.

A dishonest inspector may wish to suppress evidence which might incriminate him. An unscrupulous owner might want to clear the record of his property by altering that record rather than by doing the work ordered. Any attempt in that direction involves getting hold of so many links that some are usually omitted, so that discrepancies in the record appear and the fraud is quickly detected. In one notable case a lawyer had arranged with a contractor, for a substantial fee, to secure the early dismissal of violation orders on certain properties. The contractor afterwards claimed that the service he thought he was paying for was simply a little acceleration in unwinding what many considered the unnecessary "red tape" of the department.

The lawyer's method, however, was this. He secured confederates in four divisions of the department, each of whom was responsible for destroying or altering some piece of evidence. Cards had to be abstracted from several different files, certain stamped entries had to be made, index cards had to be taken away from the department that false entries might be typewritten thereon, letters on departmental letterheads were written, and signed by a purloined

signature-stamp, and other operations gone through. Notwithstanding the care and cleverness with which this plan was organized, the alterations made in the records and the discrepancies arising, soon attracted attention, and put the department on the track of the fraud. An indictment for forgery was found against the offending lawyer, and the result was a salutary warning against further practices of like nature.

In practice, then, this complete system of records has been of great service in assuring the success of the social experiment involved in the tenement house law by assisting in its enforcement. It helps materially in keeping the inspectors up to their work, and in checking "graft." Anything that makes grafting difficult, and blocks the way of temptation, is naturally a help to the morals of the inspection force. It also helps enforcement on the side of compliance by the owners. With a complete record of actual conditions before them, heads of departments can make their claim against the owner with assurance that the claim is just. Many times the owner who is disinclined to admit the justice of these claims, on being confronted with evidence, is obliged to agree that they are just. These exact records not only enable the officials to resist the pressure of all sorts of demands, but form a means in turn of checking the efficiency of their administration. For these records, under the law, are "public records," to be at the public disposal under proper regulation.

The records have also proved useful in testing the results of the "experiment"—otherwise the tenement house law. They have afforded material to show the different effects upon housing conditions of the different provisions; to show hindrances in popular feeling, or in attendant circumstances, economic and social, to carrying out the law; and to show unforeseen practical difficulties. This material has been freely utilized to secure proper modification of the law, and to resist unjust attacks upon it, and has been of the greatest value.

When the tenement house department was organized, no one knew even how many tenements there were. Now a running account of the tenements is kept, so that at any time one may know how many there are, whether of the improved type erected under the law of 1901, or of the older types; how much living accommodation each class affords, what are the structural conditions in each, how they are distributed, how rapid is the progress of improvement, and so on.

A field of study that should be worked more thoroughly is that of the relation between housing and public health. The health record gives the basis for that, but attempts to carry on such studies have not been very successful, partly because sufficient material had not been accumulated. By this time, however, the record covers a period of eleven years, and with a carefully framed plan, some valuable results ought to be secured.

To make the best use of records along the lines indicated, they must be continuous, and they must be comparable. A gap in the record may leave out the very link you are most anxious to find. When the records are not kept in the same way at one time as another, comparisons are not possible and we cannot trace any line of improvement or deterioration of conditions, of increase or decrease of efficiency. It is a vexing problem, often, whether to let a poor system of records stand, and keep the possibility of comparison, or to improve it, having a better system but losing comparability.

And of course in establishing a system of records there must always be an intelligent adjustment of means to ends. The New York system, applying to over 100,000 tenement houses, would be absurd for a town of two or three thousand dwellings, where one man is both inspector, keeper of records and chief of department. Furthermore, in any place, big or little, any system of records is absolutely useless unless the records are made with intelligence and used with intelligence. No "system" by itself can secure either of these essential points. If records are made by inspectors, these must have training and sense enough to know how to set down their observations accurately and clearly. The "practical" man, who has been a plumber, or a builder, or a trade worker of any kind and is supposed to be especially fitted for housing inspection by reason of his concrete knowledge of conditions, is likely to fail on this very point. It is surprising to find what mistakes can be made in recording matters of observation, as for example, in merely enumerating "dark rooms"—a term clearly and expressly defined in the law, and in departmental regulations.

Inspectors should not only be required to pass an examination for appointment, but should be carefully trained after appointment. This means that their chiefs and supervisors should be capable of training them and keeping them up to a standard.

It is of course perfectly useless and wasteful to heap up an elab-

orate record of conditions that is not used by anyone. This is the defect in many elaborate systems installed—there is no one around with sufficient intelligence to draw any conclusions from them. In installing a system it should be considered who is to use it, and for what purpose, and the system should be adjusted accordingly. Much of our proposed reform in municipal accounting fails in this way. A system is adopted requiring a large staff of experts and much expense to keep it going. The "experts" may be drawn from an ordinary clerk's or bookkeeper's eligible list, and unable to keep up the work properly, the reluctant heads of departments upon whom it has been forced will not make use of it, and the general public cannot. Its only use is for professional investigators, and its value will depend upon the judgment they exercise, which is not always the greatest.

A HOUSING SURVEY

BY CAROL ARONOVICI, PH.D.,

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The last century was a period of human achievement; the present century promises to be one of human improvement. We have been hoarding knowledge and wealth and boasting of what the human mind is capable of knowing and doing; we are now ready to use this wealth and knowledge and experience for the general improvement of the race by increasing its capacity for work, service and happiness. In a word, we are turning from the objective to the subjective in human society.

In dealing with housing conditions and the evils resulting therefrom we find that the lines of resistance to disease, infant mortality, longevity and industrial, moral and social efficiency may be unhesitatingly drawn along the boundaries that divide the community according to the condition of the homes and the living conditions which they render possible. This being the case it is of the utmost importance to ascertain the housing conditions of a community in order to ascertain the forces working against proper housing conditions and make possible the outlining of constructive housing policies consistent with the local facts.

The far reaching influences of bad housing conditions must appeal therefore to those who are interested in the welfare of the community for its own sake, as well as to those who calculate their social service in terms of increased efficiency in the daily tasks of the workers, and savings in financial responsibility both towards the city and the philanthropic agencies of the community. The work of ascertaining housing conditions of the people should therefore be done with the utmost care and the results weighed in terms of health as well as in terms of moral standards and industrial efficiency.

The most serious defects of housing reform work in America are the assumptions that the problem is one apart from the rest of the community and that it is wholly a problem of sanitary accommodations. That the absence of town planning and the general environmental conditions outside of the home coupled with inflexible

and frequently antiquated laws and practices are the real menace of the home must, however, be realized.

The broad point of view of the problem may be briefly stated as the providing of healthful accommodations, adequately provided with facilities for privacy and comfort, easily accessible to centers of employment, culture and amusement, accessible from the center of distribution of the food supply, rentable at reasonable rates and yielding a fair return on the investment.¹ That the housing problem will always be with us unless we consider its more intricate and far reaching relationships to our entire social and governmental practices is daily becoming clearer to both social workers and enlightened statesmen.

The sanitary aspects of the housing problem should be considered along the following lines:

Conditions of Dwellings

1. Is the locality a community of homes or of three and four or more family houses and what is the number of each type?
2. What is the average proportion between rental and family income? (If this cannot be ascertained, the rental per tenement by number of rooms in some characteristic sections should be considered.)
3. Are the families crowded in small tenements and what is the extent of the crowding? (Number of persons per room, crowding in bedrooms, etc.)
4. How frequently are roomers taken in to piece out rents?
5. Is the water supply in the homes of good quality and sufficient for the use of the families?
6. Is there a sewer system and is it connected with the dwellings in all parts of the city? If not what is the number of dwellings not connected and the number of families and individuals affected?
7. What is the character of the toilets; are they located in apartments, cellars, halls, basements or yards and are they connected with the sewer? (Secure facts concerning each.)
8. Are toilets used by one or more families each and to what extent is overcrowding in toilet use prevalent?

¹ Carol Aronovici, "Constructive Housing Reform" in *National Municipal Review*, April, 1913, p. 221.

9. What types of toilet ventilation are prevalent?
10. To what extent are bathrooms provided in the poorer sections of the community?
11. Is household refuse removed by the city and what is the method and frequency of removal?
12. How frequent are windowless rooms in dwellings?
13. How frequently are rooms dark because of proximity of buildings, lighting through airshafts or narrow courts?
14. Are yards provided in tenements and what are the prevailing sizes?

Environment of Dwelling Houses

1. What is the average width of the tenement streets and how wide are the sidewalks?
2. Are the streets swept, watered, flushed or oiled in the tenement districts and if so how often and by what methods?
3. Are the streets paved and what is the type of pavement in tenement districts?
4. Are playgrounds provided in the crowded districts?
5. Are street car lines common in these districts and is the use of the streets by children dangerous?
6. Are saloons common in the residential districts and to what extent are they found in buildings occupied by private families?
7. Are houses of prostitution or prostitutes permitted in the neighborhood of or within dwellings?
8. Are the dwellings in the proximity of the factories and are they affected by smoke, gases or other by-products which might be injurious to health?
9. Are there in the proximity of dwellings swamps or lowlands which breed mosquitoes or produce offensive odors?
10. Are noises prevalent in the dwelling districts that could be reduced or avoided?
11. Are abandoned buildings common in the neighborhood and are they protected against improper use by tramps and persons of questionable character?

Rooming Houses

With the growth of industries and the migration of labor from one center to another has come a problem of housing persons living away from their families, which in many cities has assumed large proportions and frequently constitutes a serious social problem. The rooming houses and the hotels are the places which largely provide homes for this class of population and the consideration of these hotels and rooming houses should receive attention in the body of a housing survey. The problems connected with this type of housing can be stated in this manner:

1. What is the total population by sex living away from home?
2. What is the number of rooming houses connected with private homes?
3. What is the number of hotels and public rooming houses and what is the method used in conducting them?
4. Are they controlled by local or state legislation, what is the character of this legislation and what authority enforces it?
5. Are there any special rooming houses provided by philanthropic agencies and what is their capacity?
6. Are there houses or tenements in which men keep house without women and what is their number and condition?
7. What is the sanitary condition of the rooming houses and hotels? (Use as a basis for study the questions on conditions of tenement houses.)

Ownership of Homes

Closely connected with housing conditions is the rate of home ownership existing in the community. Ownership determines not alone the condition of the homes, but the stability of the population, the standard of citizenship and self-respect.

The main questions in connection with this subject to be asked are as follows:

1. How many families own their own homes?
2. Is the tendency to own homes on the increase or on the decrease?
3. Are the individually owned homes on the average better than the homes owned by other persons or corporations?
4. What is the general character, size, building material, and architecture of individually owned homes?

5. What is the average assessed valuation of the individually owned workingmen's homes?
6. What is the per cent of individually owned homes free from mortgages?
7. Are mortgages on homes taxed separately from the property itself?
8. What are the building associations that promote individual home building?
9. What are the practices of the local banks with regard to loaning money on mortgages or for building purposes?
10. To what extent do the mills provide houses for their employees?

It will be found upon examination of the facts revealed by an inquiry into home ownership that a disappointingly small proportion of the workers own their own homes. That this is due to clearly definable causes cannot be doubted and a survey should not hesitate to ascertain them. The taxing of mortgages, the taxing of improvements upon land, speculation in land values, lack of coördinate distribution of transportation facilities and employment centers, ungenerous and over-conservative banking practices and the high price that the wage earner must pay for the use of capital are among the main causes of the small proportion of home owning wage earners. That these causes can be removed or their force reduced has been amply demonstrated both in this country and abroad where a desire for improvement along these lines has been manifested.

As may be seen from the above general consideration of the subject the problems of housing may be segregated into three groups namely:

- A. *Sanitation*, which determines to a considerable extent the health and efficiency of the workers.
- B. *Congestion*, which has to do with sanitation as well as the morals of the tenants.
- C. *Ownership*, which largely influences the stability, thrift, and citizenship of the population.

When facts concerning the housing conditions have been collected and so arranged as to give a clear conception of the problem, a thorough study of the laws relating to housing, sanitation and house building should be made. This can best be done by persons familiar with handling legislation and with the building trade

Whenever it seems apparent that the building laws are insufficient to meet the needs of the community an examination of the aspects left without legal provision should be included in the survey. When the laws in existence do not seem to be enforced much profit may be derived from an examination of the aspects of housing legislation unenforced and a consideration of the machinery provided for its enforcement should be made from the following points of view:

1. Is the machinery and appropriation provided for the enforcement of the law sufficient to meet the local needs?
2. Is the law clear and definite enough to empower the officials to enforce it?
3. Are the officers efficient and honest in the performance of their duty?

These three questions should be applied as a test to all legislation dealing with social conditions and whenever possible the officials concerned should be consulted and their work examined with a view to securing facts and whenever possible, coöperation.

Relation of Homes to the Community

In the foregoing sections dealing with housing the individual building is considered as an independent entity, without any close relationship to other buildings or the neighborhood. Strictly speaking, this has been the prevailing point of view in most housing reform movements which have found their most concrete expression in legislation and inspection. Accessibility to place of employment, educational, cultural and amusement centers, marketing facilities to insure a cheap food supply have not received the attention they deserve in a broad treatment of the housing problem. "The city beautiful" as expressed by the town planning movement has found little favor with the housing reformers and still less with the local governments and real estate interests. The cost of land and construction of houses has not been studied with a view to developing constructive policies whereby houses may be built cheaply and rental rates maintained on a scale which would make possible good houses for all, yielding a reasonable return upon investments without placing an unreasonable burden upon the tenants.

These are important problems to solve and studies along these lines may be started by answering the following questions:

1. What transportation facilities are the street car and railway systems providing to facilitate the transportation of employees?
2. Are reduced fares for working people provided?
3. Are the outlying districts provided with adequate transportation facilities so as to make access to amusement and cultural centers easy and cheap?
4. What are the differences in the average cost of staple foods between the congested sections and the outlying districts?
5. Is the city following a carefully worked out plan in its development of streets, parks, playgrounds, etc., or are the real estate interests the main factor in the development of the community?
6. Are large tracts of land being opened up for residential purposes and what steps are being taken by the community to insure symmetry, open spaces, etc.?
7. Can individual homes be built at a sufficiently low cost to make possible reasonable rents and a fair return upon the investment? If not, why?

A fair and thorough housing survey of housing conditions and their causes will raise economic and administrative questions, far removed from the usual conception of the problem and which require immediate radical changes in our present practices. This may help to clear the way toward intelligent town development which is so frequently encumbered by legislative junk and archaic administrative practices.

HOUSING AND THE REAL ESTATE PROBLEM

By J. C. NICHOLS,
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In studying the housing problem of practically all of our American cities, much more consideration should be given to the careful creation and maintenance of good residence neighborhoods for the man earning from \$9 to \$12 a week.

Every city is considering the planning, construction and financing of the laboring man's house or tenement, the price and amount of land to be used for such houses, the tax upon them, rents, transportation, social opportunity, fire protection, street layout, the playground, and many other phases of the housing question; but little thought is being given to the actual creation and safeguarding of any extensive residence neighborhoods for laboring men.

Practically every city has its restricted and highly protected residence section for the better homes; and no high class development is launched today without the control of a considerable area of land, so as to establish harmonious surroundings and give permanency to the character of the neighborhood. The location of outbuildings; the fronting of residences; the exclusion or control of business property and other injurious surroundings; the elimination of billboards; provision of free space between the houses for air and sunshine; the establishing of building lines; provision of more room for garden, grass, trees, flowers and shrubbery; the perpetuation of restrictions; abandonment of the obsolete alley; requiring of minimum costs of residences in the varying sections, and frequently the control of the architectural design and exterior color scheme of the residence; as well as the grading plans of the lot, are carefully thought out and made a requirement in every part of the development.

In this property, the most skilled landscape architects are called upon to study the scientific layout and landscape treatment of the streets, the designing of lots for building tracts, so as to give the maximum amount of desirable exposure to every residence, and the greatest passage of the currents of air, as well as to retain every possible natural charm and picturesque opportunity of the place. Also

the rendering less conspicuous of the incongruous water plugs, the obtruding hitching post, the fire alarm box and the mail box; the provision of appropriate standards to carry the name of the street, establishing a good plan of numbering houses, the softening and harmonizing of colors in the street improvements and the elimination of ugly fences. The engineers are entrusted with the responsibility of making the plan of streets conform to both the pleasure boulevards and the general trafficways of the city, so as to give both the present and future generations the easiest opportunities of traffic circulation, both as to direction and as to grades. In addition to this, experts in road building and sidewalk construction are specifying the best material and methods for the most pleasing, as well as the most permanent, construction for high-class residence neighborhoods. The landscape treatment of the neighborhood as a whole in such residence property is given most careful consideration. All of this has given more staple value, and better residence property is coming to be regarded in most cities as an attractive investment.

It is recognized today that the progressive, efficient city may lead in industrial supremacy and at the same time place a high regard upon civic beauty and the control of the surroundings of the better homes of its people. These homes and their surroundings need not necessarily be sacrificed to the industrialism of the town. It is generally conceded that this important phase of city planning in the establishment of the residence neighborhoods for the better class of homes is creating more substantial values for such property, and sufficiently anchoring residence neighborhoods as to avoid in the future, in a large measure, the great economic loss suffered in the rapid abandonment of the various good residence sections of the city. This feeling of security in such home communities, and the feeling of permanence with which every improvement is added, are creating a more interested citizenship, and a more home-loving family. The general public interest that has been attached to the results of the various developments of highly restricted property throughout the country has been most encouraging. This is evidenced strongly by the constant and frequent study by real estate men throughout the entire United States, of such examples of the creation and maintenance of good residence neighborhoods for better homes, as may be found in Roland Park, Baltimore; Brookline, Mass., and Forest Hills Gardens, New York. The splendid example

offered by these developments is establishing new possibilities and standards for all of our cities.

Every individual home, with its well-arranged grounds, has become a powerful part of the broad city planning movement. It has been demonstrated that good surroundings pay in the better residence property. Insurance companies, banks and other loan resources of the country are already looking with more favor upon these neighborhoods which are carefully planned and safeguarded.

But is not practically all of this care and provision confined to the neighborhoods of our better homes? It is probably true that much more thought is being given to the actual housing of the poor than to the housing of the well-to-do. But is this true as to the neighborhood of the poor in comparison with the neighborhood of the better homes; and will the housing problem ever be successfully solved until more consideration is given to the creation and permanent safeguarding of neighborhoods of considerable area for the man who earns \$2 a day, or less. And while considerable attention has been given to many of these items as relating to the housing of the poor, should not the same consideration be given to every one of these phases in the neighborhoods of the poor as well as in the communities of the rich?

In every American city today, the poor man in reality buys the highest priced property on the market. He usually buys his property absolutely unimproved, seldom with even the street brought to grade. Frequently his water mains are inadequate in size, simply being small pipes laid by the aggressive real estate owner merely large enough to enable him to advertise "city water."

Many cities require the establishment of grades of the streets before the property is platted, but this class of buyer seldom inquires whether or not the street has actually been graded to the final grade, and very frequently soon finds his property 10 or 15 feet above the grade of the street, requiring an expensive retaining wall, or several feet below the final grade of the street, requiring expensive filling. This man seldom realizes the difference between the expense of the street improvements on a street 60 feet wide and that upon a street 40 or 50 feet wide; and these purchasers are often required to pay for a 5 or 6-foot granitoid walk, where a 3-foot walk would do as well, or a 50-foot paving where a 20-foot paving would meet all their requirements. Custom seems to rule rather than efficiency and demands.

This class of purchaser seldom realizes the amount of special tax such as grading, sewer, park tax, paving, curbing, walks, etc., that will soon accrue upon this property, and it is generally the object of the owner to sell all of his lots before these taxes begin to come due. Little regard is had in most cities for the establishing of residence sections for laboring men in those parts of the city where the sewer, park and other special costs will be the least.

The only thing that seems to appeal to the purchaser is the size of the monthly payment. It is frequently observed that it is just as easy to sell ground for \$15 a foot as \$10 to this class of buyer, if the monthly payment is made small enough.

The owners of this character of property generally regard simply the interests of their own few blocks. Seldom is traffic circulation of the city taken into consideration. Frequently this property is platted and sold in a location that may never be convenient to the street cars, which is so essential for the laboring man, who must necessarily use street car transportation. Frequently little consideration is given to the proximity of such property to the large factories where the laboring men are employed. Should not such neighborhoods for the laboring man be selected after a careful and scientific survey has been made of the present and future locations of factories and other large centers of employment for such laborers, so as to attain a reasonable compromise between more favorable surroundings and close proximity to the industries themselves?

This property is ordinarily sold without any building restrictions as to the use of the property. Livery stables, laundries, undertaking establishments, coal yards, slaughter houses, breweries, stone quarries, foundries, hospitals and factories of all descriptions, may be located on the adjoining tracts. A neighbor may decide to face his house on the other street and place his foul smelling barn, and his pile of manure immediately adjoining the laborer's modest home. Frequently this little home may find itself lined with privies on either boundary line.

The lot may be so narrow that the sun may never shine between the homes. The lot may be so small that the children of this working man may rarely have the joy of grass, flowers, gardens, trees, or shrubbery upon their lot, while this is the particular class that, from economical reasons alone, should have the garden opportunity for at least growing vegetables for their own daily use.

The more industrious laborer, who, with the help of his wife and family, through years of saving, may have become able to build himself an attractive, modest, four-roomed cottage, may soon find his little home between unpainted, one-room shacks, and the most undesirable neighbors, or he may find the adjoining lot being used as a junk pen, or a huckster's unsanitary yard. A little stream of water nearby, that may have been clear and pure at the time he bought his lot, several years before, may have become polluted and unsanitary. The only protection that this laborer may have for the surroundings of his home may be the health regulations, so frequently lax and unobserved in such places. This particular section of laboring men's homes may be so located that it is removed from schools and churches, and the real estate promoter is willing to leave the future of his clients to the activity of the school authorities in giving more convenient schools. Frequently the property may be immediately adjoining the jails or the houses of prostitution of the city, and the children may come in contact with such influences every hour of the day.

Probably no provision has been made at the time of platting the ground, for any public playgrounds in that section of the city; and the only possible way that they may be later secured is for the playground or park commission of the city to condemn a section of this dearly bought property and assess the costs to these already burdened lot or home buyers.

Frequently this laboring man has been enticed into buying a lot long before he should, when he was even not able to properly feed and clothe his family. Frequently a purchaser may have been led into his purchase by the advertisement that the property was beyond the city limits, and would bear no city tax, and yet within one or two years, the city may have been extended, and special taxes begin to accrue, but generally not until the owner may have disposed of all of his holdings. Who has ever heard of the agent developing such property, providing against the erection of immense and flaming billboards, or the tall, unpainted, ugly board fences so common in these sections?

In how many of these additions or sections of this character is it deemed important in the beginning to grow trees in the street to relieve the heat, or to add beauty to the homes in the future? In how many cases is any plan devised by which vacant property may be kept free

of accumulating trash and papers and weeds, which not only endanger the adjoining homes by fire, but become a serious menace to the health of the people living nearby?

Much thought has been given to the greatest possible amount of ground that can be used for each home, devising plans by which frontages may be eventually and properly made upon both ends of the lots, the erection of attached houses in order to reduce the cost of building units and afford a greater amount of land; but is the proper amount of consideration being given to the safeguards over the entire neighborhood, which are so evidently needed to avoid the injurious and damaging surroundings so common in this class of property?

Should men be allowed to build their houses on the very street line, when the owner between, with only 15 or 20 or 25 feet of ground may have already set his little cottage back 20 or 25 feet from the street in order to have room for air and sunshine, grass and flowers for his children; or should the owner across the street be able to build his house facing upon the street beyond and place his barn on the street line in his rear, thereby causing this little family to look every day into the barn-yard and manure pile? Or should the industrious laborer, who, before work in the morning and after work in the evening, has been able to build himself a little two-room home, and may have carefully placed his house to one side of his lot, in order to give room for the exposure on the south, find all of his light, air and sunshine cut off on the north by that owner not being required to provide a similar amount of free space on his south?

While frequently it is the case in such properties that, although one block of land may become fairly well built upon, several blocks of land lying between these homes and the schools, stores, churches or places of labor, may remain unimproved, causing the entire family for years to wade through the mud, water and snow over the intervening property. Probably no consideration has been given to this necessary convenience.

Real estate dealers and owners of today are not alone responsible for this condition. It has become the established custom in most cities and there has been little evidence of public sentiment to the contrary against it, and this class of buyer will require considerable education along these lines. Certainly however, many of the safeguards given the better residence property could be given in the same degree in proportion to the laboring mens' homes. Would not

the efficiency of the laborer, made possible by better surroundings for himself and his family, give greater assurance of his ability to meet his payments, or ultimately buy more land? Would not the advertisement of better opportunities offered in such a section attract other purchasers? Would not the remaining lots in such an addition, which are otherwise always difficult to sell, and frequently offered at less prices than the first lots sold, become more and more valuable and command even greater prices as a result of the better development? Should not the efficiency of the property for the purposes used, be given some consideration; and if the real estate owners of the country will not give this question the same consideration as they are in the better residence property, is it not a matter for municipal control and legislation? Many laws and ordinances in every city affecting these things in better residence property are now being enforced. Municipal control has been extended by the board of park commissioners of Kansas City, Missouri, to the right of condemning a building line in the acquiring of a boulevard for pleasure purposes. Certainly if the people have this power in such property, they could exercise the same authority in the homes of the poor.

No pauperizing influence can arise as a result of exercising this control and regulation. On the other hand it strikes at the very source of the family pride and manhood and stimulates the noblest aspirations in the laborer. It appeals directly to the strongest sentiment in him—to give his family better and more permanent surroundings.

Greater consideration by the various city governments in keeping down the costs of street improvements and preventing the unnecessary width of street and street improvements in such properties, would lift at once a great economic burden from the laboring man.

Encouragement given to the laboring man by the National Housing Association and the various social organizations of the country, that his surroundings would remain permanently desirable, would be a stimulation to this man by his own labor to further improve his home and grounds; and in this way greater results would be attained upon the character of these individual homes than frequently comes from the better home, where the owner seldom has any of the joy of the actual doing of the physical work upon his home or laboring in the soil with his own hands.

We are all familiar with the rapid deterioration of such classes of property. And is there ordinarily any real encouragement when you look at the neighborhood of the average laboring man's home? Better residence property has been carefully protected and safeguarded, with carefully thought out restrictions, and most minute planning, because it has been found that it pays financially in the end. Would it not pay the average real estate owner if he could so develop an addition for the laboring man that he would feel it was always good business to promote another addition immediately adjoining?

From the sociological standpoint, is not the moral influence of the outcome of the average investment in a home by a laboring man, one of the most discouraging phases of our municipal life? Are not his loyalty to the government and his sympathy with his community severely tested when his earnings are not only frequently dissipated by an unfair investment, but frequently lost by the lack of proper safeguards having been provided in the beginning?

Even though the value of accessible land may be such that it is impossible to have detached houses for the laboring man, is it not equally as important to give him the advantages of the encouragement of many of the other neighborhood safeguards which would apply equally as strongly to the tenement houses as to his individual cottages? Is the house, most carefully designed to meet both the demands and means of the laborer, the greatest success if it is not placed in a congenial and permanent neighborhood?

There could be no greater civic asset than harmonious and carefully safeguarded laboring men's neighborhoods. Self initiative could not be encouraged more than by giving the laborer protection similar to that given in the developments for better homes; and the good results of every housing code would be greatly enhanced if they were applied in neighborhoods created and maintained over extensive acres carefully and permanently safeguarding the surroundings of the laboring man's home.

COPARTNERSHIP FOR HOUSING IN AMERICA

By ARTHUR COLEMAN COMEY,

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The problem of new housing is three-fold, architectural, social and financial. Present methods are but partially successful in solving any of these phases, largely because the incentive to attain ideal conditions is lacking. Under the "landlord system," so-called, the interest of the original owner is in financial returns and speculative profits, whereas the dweller is interested primarily in social returns, that is, in the utility of the property.

Barring philanthropy, which is of relatively limited application, the only sure way to make these interests identical is for the resident to become the "original owner," that is, the owner before the property is developed. He must obtain capital at a fixed rate, commensurate with the risk involved, and retain all surplus and speculative profits. To secure the economies of wholesale operations there must be collective action. Finally with the adoption of such methods many concomitant advantages, chiefly of a social nature, will become practicable. Prominent among these will be the adoption of advanced methods of construction and of city planning, in the development of garden suburbs and the provision of many social functions for common use, such as community playgrounds and club-rooms.

There are three rather sharply defined types of organization for housing operations aiming to meet most of these conditions, which may be termed for convenience the limited dividend, the homestead aid, and the copartnership companies.

The limited dividend company has been in operation in this country for a number of years, usually with the rate fixed at 5 per cent. Up to the present time twelve or more companies have erected some eighteen hundred or more houses and as many tenements in the United States. Several additional companies have recently been organized, so that the movement is evidently spreading. These are stock companies similar to any real estate company, except for the dividend limitation. They either rent or sell for cash or installments.

Speculative profit is eliminated, the surplus going into improving the property or reducing payments. But the residents, as such, have no voice in the affairs of the company; and the creation of new companies depends entirely on outside initiative of a philanthropic or altruistic nature. In England most of the garden suburbs have been organized as limited dividend companies on a five per cent basis, there being at present twenty-one companies, which have already erected over 9,000 houses on 2400 acres and propose to expand over 10,000 acres with a total of 37,000 houses.

Homestead aid for individual purchasers of single houses is to a great degree already supplied by the various mutual banking institutions, but so far as the writer knows it is not in operation with participation by the residents in wholesale developments for working-men, in which collective action would secure many benefits. Such a scheme is, however, now being attempted in Massachusetts.

The third type of organization, copartnership, is a more radical advance over current methods. It is sharply distinguished from the preceding two companies by the collective ownership of the property, each resident renting from the company, of which he is a member. Once the traditional American prejudice against coöperative or social enterprises is overcome the copartnership type would seem to have the widest application to the problem of providing homes at the lowest cost and with the greatest attendant economies and advantages.

The resident will live in an attractive neighborhood and in a well built house which he is encouraged to take care of; he will secure capital at a low rate, and will profit by economical wholesale methods; he will retain all surplus profits and the unearned increment; and, finally, with common ownership he is secure from loss in case he has to move.

The copartnership method is not at present in operation in the United States, though one company is beginning work in Canada. Seventeen companies have been organized in England in the past ten years, and over three thousand houses have been erected on 700 acres of land. Smaller developments have also taken place in Germany and elsewhere on the continent.

The movement in England may properly be said to have been started in 1901 at Ealing, near London, though a small company, the Tenant Coöperators, Ltd., had been operating in scattered districts outside of London since 1888, apparently, however, with no succeeding developments. Coöperative societies have also aided their members

in acquiring some 46,000 houses by loans aggregating \$46,000,000 under methods similar to those of American building and loan associations, but have not been thus far as a rule very progressive in adopting modern ideals in planning.

The Ealing Tenants, Ltd., which is often referred to as the pioneer copartnership suburb, was organized by a few men in the building trade, under the guidance of Mr. Henry Vivian, who has since become the leading exponent of the movement. From small beginnings the society grew, at first slowly, but with increasing momentum until in 1909 the estate covered sixty acres, with provision for seven hundred houses and a valuation of \$1,300,000. At first, but one of the ideals of copartnership, the improved method of financing and tenure, was worked out. During the first five years the building was of the usual rather uninteresting type in rows along the street, but in 1906 a large additional tract was planned along advanced garden suburb lines, with artistic houses limited in number per acre and attractively grouped, and with large common grounds for recreation, allotment gardens, and many other advantages which naturally arose from the participation by the tenants in the ownership of the property. This up-to-date type of site-planning has been adopted by all the copartnership companies subsequently organized. A third ideal identified with the movement, coöperation in building, has been much slower in being put into effect, though recently several such companies have been started in the various trades.

Fast following the Ealing Tenants came the organization of a company near Leicester. This also developed slowly at first and did not obtain its site of 48 acres until 1907. Meanwhile twenty-four houses were built by a small company in Kent in 1903. In the same year Letchworth, the first Garden City, was begun in the open country thirty-five miles north of London and a portion set aside for a copartnership company.

With the growth of the movement the necessity for a central body became apparent, and in 1907 the Copartnership Tenants, Ltd., was established. Most of the local societies have joined it and contribute 1 per cent of the value of their properties to it. Its objects are stated to be: (a) To provide expert advice, based on accumulated experience, of how to buy, lay out, and develop an estate; (b) to raise capital for such societies as join the federation and accept its advice; and (c) to pool orders where practicable so that the benefits

of wholesale dealing in building materials shall be secured to the societies joining the federation.

In the past seven years ten additional companies have come into being in various parts of England, the total valuation of the fourteen affiliated companies being some \$6,000,000. Of special interest are the Hampstead companies, which own three large tracts in the Hampstead garden suburb on the edge of London. Here many new community benefits were first worked out under the expert planning of Mr. Raymond Unwin, which set the standard for garden suburb development on a very high plane. It is the purpose of the present article, however, to deal primarily with financial methods and not the physical aspects.

These copartnership societies, as they are called, are "registered with limited liability" under a "provident societies act." Capital is of two kinds—shares and loan stock. Each resident rents his house from the society and must subscribe to a certain amount of share stock; but not over \$1,000 in shares may be held by any one person. Five per cent is usually paid on shares and 4 per cent on loan stock; and the surplus, after paying for repairs and a sinking fund, is credited in capital to each tenant according to the rent he pays, until he holds the value of the house he lives in; and after that it is paid in cash.

The advantages of such an arrangement, already referred to, are, briefly: capital at a very low rate, economy of wholesale operation, responsibility by the tenant in the property, and safety from loss in case of removal.

The American development of the copartnership plan will naturally differ somewhat from the British methods, in order to meet local conditions, but the fundamental principles should remain unaltered. To organize such a company the first step will usually be for a committee to issue a prospectus, based if possible on an actual piece of land, upon which an option has been secured. This pamphlet should make an appeal alike to the prospective resident and to the investor and should give a concrete description of the workings of the company. As this is at present pioneering work in the United States, the following draft, which has been adopted by the Massachusetts Homestead Commission, is presented as a basis for such a prospectus. A number of allied benefits, such as remission of rent, have been incorporated, thus combining the best practices known for the development of improved housing.

COPARTNERSHIP HOMES COMPANY

I. OBJECTS

The objects of this company are:

1. To promote the economic erection, coöperative ownership, and administration of healthful homes in attractive surroundings, at sufficiently low cost to be within the reach of all who desire to improve their home conditions.
2. To avoid the dangers that too frequently accompany the individual ownership of houses and speculative building devoid of public spirit.
3. To harmonize the interests of resident and investor by an equitable use of the profit arising from the increase of values and the careful use of property.
4. To provide an opportunity for gardening under instruction, thus maintaining the home in part through the use and sale of products.

To quote Mr. Unwin:

"The introduction of the copartnership principle marks a new era in housing; for not only is the individual likely to procure for himself a better house and larger garden by obtaining them through a copartnership society than by any other means, but the introduction of coöperation opens up quite a new range of possibilities. For through the medium of coöperation all may enjoy a share of the many advantages, the individual possession of which can only be attained by the few. . . . In fact the scope of the principle is limited only by the power of those who associate to accept and enjoy the sharing of great things in place of the exclusive possession of small things."

II. METHODS

1. Suitable land will be acquired accessible to the city, and will be planned along advanced garden suburb lines, restricting the number of houses per acre and their character and arrangement and providing adequate roads, sites for community buildings, and allotment gardens, where the wage-earner may successfully carry on intensive gardening under competent instruction and go far towards paying the rent of the home. Under the allotment scheme he may undertake as much or as little as he feels able to carry along without being required to assume the obligation of the additional area in subsequent years.
2. It is aimed to assure a better means of laying out property and building houses. Every road will be developed with its own characteristic features; every tree so far as possible will be kept; and others planted according to a careful plan. There will be playgrounds for children, recreation centers for all ages, sites for school and other community buildings, and spaces for allotment gardens. No house may darken its neighbors, but they will be attractively grouped around central features, adopting the most recent advances along city planning lines.

It is hoped to prove that people with small means can secure adequate homes, with opportunity to garden, and continued increase in community benefits. The social center should develop into a powerful factor in the lives

of the residents. By these methods health has been proved to be augmented, the death rate reduced, and good citizenship promoted.

3. Substantial, sanitary, convenient homes will be erected, closely adapted to the needs of the prospective residents.

4. A prospective resident must present references and be approved by the directors, and he must take up at least two shares of common stock.

5. He will pay a reasonable rental and after fixed charges are paid will share whatever surplus profits are made in proportion to the rental.

6. As dividends on rent and on common stock are credited in common stock until the value of twenty shares is reached, subsequently these dividends will practically offset the rent.

7. The cost of repairs will be deducted from the twelfth month's rent and the remainder remitted to the resident, thus still further encouraging care in the use of the property.

III. ADVANTAGES

A. *To the resident*

1. He gets a home at a rental not higher and probably less than elsewhere and is encouraged to take care of it by having his twelfth month's rent remitted, less the cost of repairs.

2. He gets a house with a garden, and plenty of fresh air—a house well built and sanitary, with some individuality, in which he can take pride. He lives in a neighborhood where all are equally desirous of keeping up the property.

3. Economies will be effected through wholesale buying of land and materials, building houses in numbers, efficient management, saving in legal expenses, and the elimination of speculative profit.

4. He can invest his savings in the company at 5 per cent.

5. The unearned increment goes to benefit all the resident members, for with increase in values they will get either a dividend on rent or pay rent below market value.

6. He secures practically all the surplus profits after fixed charges are paid, in the form of a dividend on his rent, this being credited in common stock until his total holdings equal twenty shares, after which they are paid in cash.

7. He lives in a social atmosphere, with new and vital interests, and collective friendships in the community. He has a mutual interest in common recreation facilities, playgrounds, halls, etc.

8. Ownership is common, not individual, thus providing security from the risk of loss if a resident has to leave, as he has no liability beyond the shares he holds, on which he may continue to receive dividends, or which he may dispose of.

9. Capital is provided at a cheaper rate than by any other sound system, due largely to wholesale operations. Outside capital is gradually retired by savings.

B. To the investor

1. The company by collective ownership and responsibility offers an exceptional security.
2. The greater the surplus, the less the risk, and it is to the interest of the residents, who receive surplus profits, to take care of the property, thereby lessening depreciation, to find tenants for empty houses, and to pay rent punctually. This individual interest is found to equal in value 1 per cent per annum on the capital.
3. The common stock forms a fund on which the company can draw if necessary for temporary arrears in rent, or repairs due to neglect, thus eliminating loss from this item.

IV. FINANCIAL SCHEME

The business of the company shall be carried on by a board of directors, ultimately to be elected by the holders of common stock; but until the common stock is about one-half paid in the holders of preferred stock shall be entitled to an equitable representation (see memorandum).

The authorized capital stock of the company shall be \$200,000. The value of each share shall be \$100. There shall be 500 shares of common stock and 1,500 shares of preferred stock.

Common stock shall be paid for at a rate of not less than 10 per cent upon allotment, and the remainder in installments of not less than \$1 per month per share, until fully paid up, and shall be entitled to dividends not to exceed 5 per cent, payable quarterly, after all other obligations of the company are paid. Dividends shall be applied as payments on stock until the equivalent of twenty shares is fully paid up. Not more than twenty shares shall be held by any one person. Shares shall be transferable, subject to approval by the directors of the company.

Preferred stock shall be paid in full, not less than 10 per cent at the time of subscription, and 30 per cent each succeeding month thereafter, and shall be entitled to dividends as stated on the certificates, but in no case exceeding 5 per cent, cumulative, payable quarterly, out of net earnings. Holdings are not limited and are transferable. Preferred stock may be retired in any part at par on a year's notice by the directors of the company.

First mortgages at 5 per cent will be placed by the company as rapidly as houses are completed, covering 80 per cent of the value.

A reserve fund shall be established after all interest and dividends on preferred stock are paid, paying into it at the rate of 1 per cent of the outstanding capital stock per annum, until it equals the value of the outstanding stock.

V. PROCEDURE

With the total issue of 2,000 shares taken up about 250 houses can be built. As soon as sufficient subscriptions are received options will be secured on suitable tracts.

The first annual meeting will be called within one month from the time that \$15,000 on stock is paid in and a total of \$40,000 subscribed.

The company will make it practicable for a family in moderate circumstances to live in a healthful home and in attractive surroundings, and at the least cost; and to maintain it in part through the use and sale of garden products, raised on adjacent land. The undersigned committee invites your subscription to common or preferred stock. Please use the accompanying forms.

Committee.

RELATION BETWEEN THE SMALL HOUSE AND THE TOWN PLAN

BY CHARLES FREDERICK PUFF, JR.,

Author of *The City Plan of Newark, New Jersey*; District Surveyor and
Regulator, Philadelphia.

First analyze, then organize. Such is the advice given by Frederick W. Taylor in his volume on *The Principles of Scientific Management*; and without doubt the most logical method of expressing "the relation between the small house and the town plan" is by schematic diagram showing a complete graphical analysis.

On analysis, one will readily see that the small house is an element and the purpose of this paper is to point out and accentuate the fact that this element controls the most remote fiber of the network.

THE SMALL HOUSE

The lot	Distribution of population	Environment	Effective locations	Happiness
The block	Regulation of future needs	Efficiency	Proper areas	Morals
The street	Character of service	Labor	Proper classification	Health
The street system	Transportation plan	The industrial plan	Park and playground plan	Housing plan

The Small House a Real Element

It is quite possible and very probable that some one will question the statement that a single element can have such far reaching effect, but in proof of this, one has only to remember the failure of the Quebec bridge. The element involved there was the strength of steel, the strength or allowable working stress was in some way exceeded and the result was the complete failure of the bridge. A child's blocks stood on end in a row is an excellent example and its application to the subject under consideration should be studied.

Street systems are formed by coördinating the streets of a city, town or village but how often have we seen symmetryism mistaken for coördination. There is no denial of the fact that symmetry does assist distribution and circulation and it is pleasing to the eye in plan but often in its use, the main factor or element is neglected in the placing of the street. What then are the elements of coördination? Simple though it seems the answer to this question is: first, determine the future character of the block, whether it be commercial, industrial or residential; second, by scientific study of the underlying element or unit, so plan as to make the block available and profitable only when used for the purpose for which it is intended.

Great commercial highways may be planned but suppose the abutting blocks are not properly planned, is it not evident that the street will prove a failure? Residential streets may be mapped out but suppose we forget the element in this subdivision, can an economic and healthful layout of houses be effected? Generally speaking, it can not. Volumes have been written in extolling the virtues of the small house and it can safely be said that almost every one approves of it. Better morals, a sense of responsibility and increased pride follow in the wake of these small houses and when the three characteristics mentioned have been instilled into a person, higher ideals and efficiency result. Crowding? Yes, just as much congestion or overcrowding could take place in these houses as in any tenement but it does not. Sanitary conditions are vastly better. Sunshine and air are more abundant. Today "small house" building is an art in itself.

Here then is the element which has such a controlling influence on all other branches of the art of city planning. If the small house is a good institution, then we need it, and if we need it, we have arrived at a unit for measuring: (1) the size of our blocks thereby locating our streets; (2) the town's transportation needs; (3) the number of industries the town can supply with labor; (4) for providing a good housing scheme for workmen; (5) for determining the areas needed for park, parkway and playground purposes; (6) for ascertaining the number and position of foodstuff distributing stations, and (7) determining the location and size of school houses and in fact all utilities.

Relation of the Small House to the Lot, Block and Street System

It has been said that, with the house as a unit, the larger subdivisions can be more scientifically planned than by assuming an arbitrary block and subdividing it. This fact is self-evident, but when one attacks a practical problem of planning say 3,000 acres, he immediately finds that there must be a compromise between system and element. In this case the element must be given precedence where it will not affect the general efficiency of the plan.

In a rectilinear system of streets, block depths can readily be obtained by determining on the character of the house but it is just at this point where theory is rudely jarred by practice. In Philadelphia the standard block in most sections of the city is 400 feet square. This provided for an excellent layout of lots, for by placing a 40-foot street midway in the block and providing two 3-foot alleys, a lot depth was left of $88\frac{1}{2}$ feet or two 100 foot depth lots for the main streets and two 77 foot depth lots for the intermediate street. One can readily see the beauty and utility of such a layout, but alas, instead of one intermediate street being placed in a block, we now have two and the result is that the lot depth is cut to a minimum of sometimes 46 feet. Lately the board of surveyors of Philadelphia, who control such matters, have passed a resolution that lot depths should be at least 50 feet unless special reason is found for doing otherwise. But as the law allows the shallower depth, provided 144 square feet of yard space is left in the rear and side of the building, it remains for the board of surveyors to act as the check, by rejecting all city plans giving these objectionable lot depths.

Therefore, while the small house may be a great help to the street plan in many ways, yet it often affects it adversely. The small house of the Philadelphia type depends upon the rectilinear system for success and on this account more than once in Philadelphia, plans for a gently curving street following the natural topography have had to be abandoned owing to the attitude of the real estate owners and builders. Gradually however, these men are learning that "blighting" a high-class neighborhood with houses entirely out of its class is poor business.

Relation of the Small House to the Transportation Plan

That the small house aids in the distribution of population is also a fact which has an important bearing on the "city plan." Comparing the density of population, for example, in any tenement district with the population in an average small house district gives astonishing results. Once more, in planning or providing for future extensions, etc., the ultimate service necessary can easily be determined and this in itself is a wonderful help to either a city builder or planner. Naturally there are adverse transit effects created in a "small house" plan and one of these is the length of the local distribution lines. This point, however, acts as a boomerang to those making it, for if the transportation problem is properly solved, rapid transit lines will carry to distributing stations and the local surface lines can be comparatively short.

The Relation to Industries

This is the era in which a man is not judged by the number of hours he works but rather by how much he produces. In other words, efficiency is the measuring rod. Can anyone doubt that environment affects efficiency? The actual results speak for themselves and if one needs any proof of this fact, he may find it in the north-eastern section of Philadelphia where thousands of these homes are built. Is it not reasonable to suppose that a workman will desire to work where he can find the best living conditions? For the past twenty-five years, great corporations have been removing to the open country, establishing new communities and providing the "small house" for their workmen. How then can we successfully plan a great industrial zone without due consideration to the element in the housing of its workmen and is it not true that in this element "the small house unit" has a vast controlling influence?

The Relation to Housing

It was mentioned above that great corporations were removing to the open country and establishing new homes for their workmen. Does anyone suppose that this is done on a philanthropic basis? They have realized what proper housing and environment can accomplish for a workman and the efficiency procured by this method pays large dividends. Gerald Lee in *Crowds* dwells considerably

on "the inspired millionaire" and he mentions Mr. Cadbury in favorable terms, but the writer is firmly convinced that Mr. Cadbury's shrewdness as a student of human nature and industrial reform led him to establish the village of Bourneville which today is a model of housing.

If the Philadelphia small houses were taken and interesting groups made of them instead of the long straight line, the acme of perfection in workmen's houses will have been reached. This would still further affect the size of lot and block and subsequently the street system. These houses are usually from 35 to 50 feet in depth. In the better class they are often built in pairs thus giving three sides of the house free to sunshine and air. Now, if a group of four of these smaller houses of say 14-foot front were placed together back to back, instead of having 28 feet of air and sunshine, they would have about 50 feet or nearly double. In addition to this the construction would be more economical. Any scheme presented on this subject must be backed by figures showing a financial gain, if it is to be considered at all. Therefore, assuming that the average frontage of a house is 15 feet 4 inches, in a row we have 26 houses and in a block 156 houses. In the scheme suggested using a 14 foot front we could obtain only 132, a loss of 24 houses. Again assume that the profit on these small houses selling between \$2,000 and \$3,000 is \$250 per house, the loss then would be 24 times \$250 or \$6,000. Suppose now that owing to the better advantages of this style of layout \$50 could be added to selling price. This would total \$6,600 and, subtracting the loss above mentioned, produce a net gain for the block of \$600.

Still another factor, and a large one, is the cost of construction. Here quite a percentage could be saved in many ways, one small item being in plumbing. A system could be devised necessitating but one water supply and one sewer outlet per unit and the system for the entire unit could be placed with great economy. If the saving thus effected be placed in beautifying the development, Philadelphia could become, with a single bound, just what its founders intended it to be, a garden city. I believe this will come to pass, at least in part, as soon as the builders realize that they are losing nothing. I believe it will still further emphasize the influence of the element in determining a housing scheme as well as a street system.

Relation to Parks, Schools, Markets, etc.

To the remaining subdivisions of city planning the small house has exactly the same relation as it has to the foregoing branches. Evenness of distribution of population produces a higher moral plane, greater sense of responsibility and appreciation of various benefits provided and will tend to produce a natural protection for these utilities. With this coöperation greater projects can be planned and supported and in time no man will be so ignorant as not to appreciate the greatest work of art that man has ever produced—the modern city.

Thus we see that the small house and the inhabitant thereof play an important part in the drama of city planning and building; and it remains for the engineer, the architect, the social worker and others to get their thoughts together and perfect this element which has such wide influence. Beautify this utility, spare no effort to make it the most comfortable place in the world for its dwellers and they will return the effort put forth in their behalf many fold greater. The inward thought of man is just as readily influenced, as it is expressed, by his house. Why lose this splendid opportunity for moulding characters?

Plan, plan well, without hesitation, radical, if you please, but forget not the one real element of all planning—the small house.

RELATION BETWEEN TRANSIT AND HOUSING

BY JOHN P. FOX,

Secretary of the Transit Committee, City Club of New York.

One of the most interesting developments of the last hundred years is that of city transit, or simply transit, the importance of the subject being responsible for the appropriation of this hitherto general term.

It was many years after the introduction of steam that the street railway was introduced, and it now seems curious how long mechanical traction in any form was delayed on the streets after its universal use on the railroads.

It is hard for us to realize today how many thousand years the world managed to exist without real transit facilities. Cities have existed for ages, but it is only within the last fifty years that street cars succeeded a more meager omnibus service; while the real development of transit has occurred since the introduction of electricity—twenty-five years ago.

It is well sometimes to look back over the past and see whether all the changes have been beneficial or whether developments have taken place which are not altogether best and which should be turned in the right direction.

In the early days of American cities, their small area enabled people very largely to walk to their work. There was space enough for some persons to keep horses, especially in the smaller cities and immediate suburbs of the larger ones. Early in the last century the omnibus was introduced to entice people to take life easy and surrender exercise and money at the same time. The street railway succeeded the omnibus, with its faster, smoother, and quieter service. In London first, and then New York, the slowly awakening desire for faster travel produced the first subway and the first elevated railway. But it was not until the introduction of electricity that transit reached its most rapid stage of development and that people became so dependent on means of riding to work and traveling rapidly through the streets.

Today transit has pushed its way into almost every corner of the globe; and, while the people of the old world were slower at first to

change their habits than those of the new, one English city has seen its rides per capita multiply six times over in nineteen years, or increase by 500 per cent, while Philadelphia and Boston's rides per capita increased only 50 per cent.

Looking most critically at the growth of transit, many beneficial results are apparent. Families have been enabled to leave undesirable neighborhoods and move to houses where better surroundings and more space are afforded. Communities adjacent to each other, but separated by space or topographical conditions, have become more united and jealousies broken down. The possibilities of social intercourse have been greatly increased and the people as a whole must have benefited greatly by the large extension of social horizon and the widening of the area in which one could make friends. For many persons the time in getting to and from work has been reduced; persons out of work can look for new employment more easily; work requiring travel about a city is more easily carried on. Places and means of recreation and exercise have been made more accessible, such as parks, playgrounds, theaters, amusement resorts, country and seaside, educational institutions, museums, concert places, churches, etc., can more easily wield their influence for good by becoming more accessible. Persons in hospitals and other institutions are within reach of their friends. Business has been concentrated more in the center of cities, a thing which some persons consider a disadvantage but which Dr. Werner Hegemann of Berlin believes is one of the marked superiorities of the American city over those of the old world. More land has been opened up, permitting advantage to be taken of lower prices and lower rents.

But with all the advantages brought by transit, there are serious disadvantages which have been altogether too much overlooked. The most objectionable accompaniment of transit today is the over-crowding of the cars, an evil especially aggravated in America, owing to the indifference, selfishness, or stupidity of most of the traction companies, and the ignorance or ineffectiveness of public authorities. Those who have studied this condition of over-crowding have found that it is an unnecessary evil, especially in the light of European experience. But companies have carefully fostered the belief that congestion cannot be remedied and still cling to the delusion that it pays; so that the evil results, though somewhat improved in the last few years, still persist.

The worst side of transit today is its unhealthfulness. People are obliged to stand while traveling long distances, adding often to the fatigue of long hours of labor. They are brought into contact favorable for the spread of disease and injurious to morals. Politeness and kindness are not only well nigh impossible but the selfish instincts of people have been developed to an alarming extent by the rush to get places on cars. Women and girls are the worst sufferers; men have been the most demoralized. The old and infirm can hardly travel safely even when attended. The air of many cars is still debilitating when the windows are closed, though ventilation is slowly being recognized as an asset by the companies. But in the New York subway, where the congestion can be found at its worst, and where the air receives the most pollution from human emanations and the steel and particles due to wear of equipment, the only attempt at ventilation is still simply the churning up of the car air in summer by revolving fans, the fresh air finding its way in as best it can. The subway is really the sewer for air of the street, and the more ventilating openings there are, the more the street dirt can filter down into the tunnels where it is breathed at the stations and sucked through by the trains into dark regions where the disinfecting rays of the sun rarely penetrate. The noise in subways is bad enough for those who must listen to it, still worse for those who strain their throats to talk. Better car lighting may have reduced the eye strain; but almost all cars in America, both steam and electric, through neglectful design, vibrate too much for comfort, if not for safe use of the eyes for reading.

While the cost of transit to the individual may not seem large, at the same time one cannot help wondering whether there is not a great waste of expenditure going on. The cost of riding per capita seems small, being about \$10 per year in Pittsburgh, \$14 per year in Boston and Philadelphia, nearly \$20 for Manhattan and the Bronx. But when the cost per family per year is considered, it is about five times the previous amounts. And the actual sums spent by persons who do ride and the proportion of family income devoted to the purpose are often surprisingly large. Some commuters who live near New York spend as much as \$150 a year riding to and from work.

Many New Yorkers today are proud of the city's investment in transit lines, and of the immense sums that are being expended for new lines. Other cities have caught the fever for subways and are building or planning to build. Whether the immense investment for

transit in New York is not partly unnecessary because it produces more or less injurious results and is proving an economic drain on the community without a sufficient gain still remains to be ascertained.

In addition to the possible money loss to the individual and the city from too much transit there is the possible waste of time. A half hour or an hour spent between home and work twice a day constitutes a considerable share of a lifetime. If this time were spent in walking it would generally be beneficial. When it is spent in carefully reading the newspapers by one seated in a well lighted, well ventilated car, or reading anything worth while or in useful conversation, or in quiet resting the result may be beneficial. But when spent under the unhealthful conditions already named, there is certainly a loss. The longest daily journeys are not to be found in America, however, but in Belgium, where the remarkably low workmen's fares on the state railroads, enabling men to travel 6 miles for 2 cents, 21 miles for 3 cents, 38 miles for 4 cents, and 58 miles for 5 cents, encourage a workman to keep his home at however great a distance his work may be. In extreme cases a man will spend six hours every day on the train, with only five hours at home at night, from 10 p.m. to 3 a.m.

While in many cases transit development has resulted in the moving of families into better homes, in the case of the New York subway there appears to have been little gain. Before the subway was completed all along the two northern branches, apartment and tenement houses began to spring up and the people who have moved uptown along the new lines have merely exchanged one tenement for another, newer perhaps, but still a tenement. The larger and uncomfortable ride offsets the improvement in living conditions.

There is one curious aspect to the remarkable increase in riding, especially in the larger cities. It has been found that, as fast as new facilities are provided, they become overcrowded. This is notably true of the New York subway and has been used as the strongest argument for more subways. But, if more subways will always result in more congestion, are we sure it is right to build them? Their construction has been urged with feverish anxiety lest existing transit lines be swamped. But it appears likely now that new lines largely create their own traffic and congestion and that if they were not built, there might be simply less travelling going on, to the benefit perhaps of the city and not to its detriment.

It should be made clear at this point that this apparently pessi-

mistic view of the value of transit does not mean that the writer is against transit, but that he is merely raising the question as to how much of it is really needed, how much not needed or really undesirable.

For the possible evils of too much transit, city planning suggests a remedy, viz: walking to work. This does not mean a return to the conditions when every one worked at home, with his shops in his house; but rather the locating of business, industries, and commerce on the one hand and houses on the other so that persons can walk to and from work. Some people believe this can be brought about by the scattering of industry, so that houses can be used all about the place of work. But would not this result in too scattered a community and undo the beneficial tendency towards unity which transit has brought about? Other persons believe in creating different centers of activity, with people living about these centers, connecting them with the main center of the city and with each other through adequate radial highways and transit lines. Even with such a plan, too great a spreading out seems possible and too great an expense seems necessary to connect the centers together with adequate highways and rapid transit lines.

The New York subway, curiously enough, suggests the best remedy for preventing the very evil which it has caused. At the same time that it has been creating too much riding at the rush hours to and from work, it has been spreading business out in a long line up Manhattan Island. Manhattan Island today has, roughly speaking, five zones. In the center, along the subway and central transit lines, is the business zone. On each side are housing zones, made up of tenements and old houses, in the southern half of the island and newer houses, tenements and apartment houses in the northern part of the island. Along the river front are two commercial and industrial zones. The two housing zones extend far south, flanking even Wall street on the west side, and are absolutely indispensable, because they permit so many people to live within walking distance of work who could not afford the long ride to and from outlying sections.

It is surprising how many people do walk to their work regularly, in all cities. Boston, by a miracle, has stopped the march of business over Beacon Hill, and has there, and for the Back Bay, a large reservoir of space for the wealthy to live near their work. The poorer classes can live in the west and north ends, or over the rivers and channels in Charlestown and South Boston, and still be near the business and commercial sections. Some cities are better situated than

others, but the idea of walking to work is not so revolutionary as it may seem to some people.

The application of the New York idea is simply this: That every city, as soon as it can afford it, should build a rapid transit line through the district or districts best suited for business, shopping and similar purposes, providing for the best possible train service and lowest possible fares, so as to induce business from existing locations to locate along the new line. This line should be located as far as possible so as to allow housing zones each side, where the poorer workers at least could live within proper walking distance of their work. A transit line, with fast and good service, ought to do for other cities exactly what the subway has done for New York, which is making it possible again for people to live in most desirable districts like Murray Hill, and men to walk to their place of business and women to the stores close by.

The radiating of transit lines, as in Chicago and Boston, is a hindrance to this plan and where radiating lines are needed to serve existing conditions the best improvements should be made along the route best suited for the extension of business. Boston, for example, might have had a four-track rapid transit system between Charlestown and Roxbury, which would have kept the Back Bay for residences and prevented the present uncertainty where to locate new stores and buildings. It may not be too late even now to make the improvement. For Philadelphia, Broad street should be made the business axis, with a straight transit line from north to south and without the ill-advised delivery loop subway now planned, which would tend to duplicate in Philadelphia the evils of Chicago's congested business center. Chicago itself certainly needs a real rapid transit line, running straight through the down-town district, to extend business out the way that the New York subway has, with a chance for housing each side. Pittsburgh needs lines extending from Allegheny to East Liberty, around one or both sides of the hill district, near the surface all the way and not a deep tunnel as planned, which would merely develop two congested business centers down town and at East Liberty, neglecting all the available business and housing land between where topography would force almost ideal conditions of living and working.

The writer is aware that the foregoing suggestions are contrary to accepted standards of city planning, especially in the advocacy of a

longitudinal city as against a round city. But the more one studies^s the round city, the more faults it develops and the more objections arise.

The round city, as found in America tends to have a congested business center, with high buildings, high land values, high rents, congested streets and similar faults. It tends to require riding to and from work, especially if one wishes to live anywhere near the country. It requires too many radiating streets to reach surrounding territory, using more land than necessary. It makes it impossible to build one adequate rapid transit line to serve all the central district and the residence sections. It buries most people in its midst too far from the country, the latter being reached only by riding, which many poor people cannot afford to do.

The advantages of the longitudinal city are most marked in the thriving municipalities of Barmen and Elberfeld just east of Düsseldorf in western Germany. Lying along the valley of the Wupper River, is one of the prosperous regions of Germany, famous for its chemical industries. The manufactories extend along the river, served by two lines of the state railroads. On the slopes of the valley above the river are the homes of the workmen, within walking distance of work, while directly behind the houses is the country, within easy reach of all. Cheap passenger transit is afforded the whole length of the region by the railroad lines and by the well known suspended railway, built largely over the Wupper River. This suspended railway, supplemented by surface electric lines, affords the utmost facility for reaching the industries along the valley for convenience in case of a change of work, for reaching the business and shopping sections, the amusement resorts, etc. The workmen can travel the whole length of the line in the morning for one cent, 8½ miles. At different points along the valley is business concentrated as at Barmen and Elberfeld. These business districts ought to be extended in the future at right angles to the river, in order not to encroach on the manufacturing zone. Adequate transit should be afforded to the lateral business districts so as to develop their extension away from the river. With the people working in the business houses, living on each side of the lateral zones and the workmen above the industries in the valley, an ideal community would be found.

The situation of the industries at Barmen and Elberfeld is extremely suggestive. Would it not be well to locate all industries in narrow zones along railroads, with the houses close by and the country

just behind instead of scattering factories all over a city or in small towns? Should not business also be located ideally in a narrow district at right angles to the industrial belt, with houses each side and the country again near, and a rapid transit backbone, crossing the industrial belt at a central station? If these ideas are right then the model city is a Maltese cross; narrow enough to keep the country always within walking distance of all the inhabitants, rich and poor. If those who are inclined to criticize this ideal will reflect on it and try to apply it to different cities, perhaps they will see the advantages over other city developments. The adoption of the cross-shaped city with industrial and business belts and cheap and rapid transit in both directions seems to be the next step in city planning.

In closing, one would point out the superiority of the suspended railway found at Barmen and Elberfeld over all other types of rapid transit lines. Improved on in the Berlin plans, and recognized as the ideal by most of the leading German engineers, the suspended railway has none of the defects of subways and ordinary elevated roads. Safer, quieter, cheaper, with no flooring to obstruct light and air, with no noise to damage property, with no possibility of derailment, with a cost only two-thirds that of elevated lines, stable and smooth running, the suspended railroad is as remarkable a development in transit as its location in Barmen and Elberfeld is ideal for city plan. The cars are capable of running in a subway with none of the dangers of the ordinary railway. But the logical place for human beings to ride, as some of the foremost American subway builders have always maintained, is in the light and air of the streets, with freight and not passengers underground.

THE INTERRELATION OF HOUSING AND CITY PLANNING

By ANDREW WRIGHT CRAWFORD,

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Over much the greater part of its area, the physical city is the result of the coördinated action of housing and city planning, each also acting and counteracting upon the other. Each is affected by the operation of forces that do not play upon the other, but each is subject to influences that also control or affect the other. Some approximate definition of these two terms is necessary. Such definitions are doubtless given in the papers that precede or succeed this one, but both city planning and housing are in a state of flux, and individuals use the terms with different interpretations.

Housing covers places where people live—places that used to be called "homes" and that still are called homes in the country and in parts of cities. But a flat does not have that sense of family life separated and shut off from all the world outside, that sense of peace and happiness and aloofness, and comfortable security, that the word "home" brings to one that has known an abiding place other than a flat. But, nevertheless, it is the many-inhabited flat, the tenement, that has caused the rise of the housing inquiry, an inquiry that is gradually creating a knowledge that has something of the character of a science. The forms of living are too various to permit such an investigation to develop a strict science, but certain of the details of housing, such as the amount of cubic space of air that each room should contain per each individual, are rapidly becoming, and in some cases have become, scientifically understood; and that understanding is being formulated into statutory law. Housing is not generally regarded as applying to buildings intended for business, commerce, manufacturing, transportation or similar business.

City planning is concerned primarily with what the public authorities do, or with what they can control, such as the street and other transportation systems, the recreation system, the dock system. It is in certain details that its direct action upon housing is most apparent.

Supposing that the best city plan in its widest acceptation were realized, bad housing conditions would still be constantly arising. Room overcrowding and personal filth cannot be prevented by city planning; these are examples of cases where housing is only remotely connected with city planning, and where many other causes,—education, physical fitness, the standard of living of the community, for example—have more direct bearing. Nevertheless the physical city has an effect on the physique of its inhabitants—a city like Chicago with Chicago's recreation centers, will have fitter citizens and fewer unfit ones than a city like Chicago without such playgrounds. It is in large measure true that the saying, "the condition of the sty depends upon the pig," applies to the surface problems of housing. Put a public-school-educated, healthy family into a filthy house, and it will be a different dwelling by the morning. Obviously, therefore, so far as city planning affects the physical citizen it will have a relation to housing. Other examples of such relationship, less remote and more remote, could readily be given, were not the space required for the phases where the action and interaction of housing and city planning are direct, and consequently more easily demonstrated and more easily made to coöperate towards good results.

City planning will be shown to have its effect on the structure of the house, not the use or abuse of it after its construction. The chief agencies in creating this effect are transportation, lot dimensions and heights of buildings, as provided for or permitted by the city plan.

All of these have to do with the space of the city that is not to be built upon. A chief function of city planning is to provide open space, whether in the form of parks or playgrounds, streets or parkways, court-yards or alleys. The common function of these diverse open spaces is to let sunlight and fresh air into the city—each open space also provides for other necessities of city building, but all provide these essentials. An important function of housing, perhaps the most vital, is to let sunlight and fresh air into the house. Obviously you cannot have fresh air within the house if there is none without, and hence city planning and housing are from this point of view the necessary complements of each other.

The fundamental factor in city planning is transportation, by which I mean not only the system of rapid transit, but the system of

streets. Streets are the only indispensable method of transferring an individual from one point to another, the particular means, whether by foot, by horse-drawn vehicle, motor, trolley car, subway, or elevated, being a secondary consideration, all the improved methods depending ultimately upon the street. True, subways may, and frequently ought, and in two cases, the London tuppeny tube and the Harvard-Boston line do, leave the lines of the street, but generally they follow them.

The directness of the dependence of housing on transportation in a city of large size will be shown shortly by an unfortunate example, but first as to the qualifications as to size. As long as a community is so little extended that the laborer can live within an easy walk of his place of labor, the facilities of street and railroad transit systems will not be reflected in his home. But when the community passes beyond that stage, the situation changes. Ebenezer Howard, who is generally regarded as the originator of the English garden city idea, the chief modern contribution of that nation to city planning, quoted approvingly a recent article that declared that what is needed is "England planning," in order that "the problem of the transport of the worker may be most economically and happily solved by bringing the distance necessary to be traveled within easy range of a walk or a bicycle ride." To do so, it will be necessary to create many small cities and to limit them arbitrarily, as has been done in Letchworth. Such methods do not savor of practicableness for the condition that confronts us, which is indeed not a theory. But the suggestion serves to emphasize the distinction between small and great communities so far as the effect of transportation on their housing is concerned, a distinction that is really one of kind and not merely of degree.

The dependence of the workman in the big city upon transportation for the character of his home, and indeed for the possibility of his owning his home, will be evident from a moment's thinking of the places where workmen live in New York and where they live in Philadelphia. New York for years offered no opportunity to get out of the straight jacket made by its bounding rivers, so that the workman who earns \$1.75 or \$2 a day, in the first place, must live in a six-story flat, with no yard of his own for his children to play, and hence, for bodily and mental health; and in the second place, he cannot aspire to own the property—even the thought of it.

seems absurd. But the Philadelphia laborer lives in a two-story, single-family (*his* family) house, and can aspire to own it, and does so to the extent of 20 per cent—the statistical total being 22 per cent, including persons who are not covered by the general definition of the word "workman."

The direct dependence of housing upon transportation is shown by the same city. In a report to the City Parks Association of Philadelphia, two years ago, the author called attention to this fact as follows:

Upon transportation depends of course the ease, rapidity and flexibility with which commerce flows, but transportation affects vitally not only the commerce of the city, but its housing conditions as well. We have had unfortunately in Philadelphia recently a sharp reminder of this truth, a reminder that has taken a form, that threatens the extension of our system of two-story, single-family homes. When the Market Street Subway and Elevated Railroad was built, it brought within fifteen or twenty minutes of the center of the city a considerable area of unimproved ground in West Philadelphia, with the result that the land appreciated in value so much, that the ordinary workman's house, two stories in height and occupied by one family, would not bring a commensurate income. The result is that two-flat, two-story houses have been erected in considerable numbers within the sphere of influence of the subway-elevated railroad. In order to prevent this result the transportation facilities of the city should at the same time have brought other large areas into competition. If land to the southeast, the south, the southwest, the northwest, the north and northeast, had been brought within fifteen or twenty minutes of the City Hall, the evil result in West Philadelphia would not have followed. The system of two-story, single-family houses can continue to exist only so long as it brings a fair return on the value of the investment. That value can be kept down only by competition. If it is not kept down, the system of two-story single-family houses will inevitably give way.

There is no use blinking the fact, that these two-family flats in West Philadelphia portend evil to the working classes of the community and to the local body politic. If two families can live in two-story flats, why not erect a third story for a third family? With the ground purchased and the supporting stories already built, the third story will not cost much in addition, and the rent will be almost as high as that obtained for each of the other two stories.

This argument cannot fail to bring its disastrous results in the near future, unless the family, which otherwise might occupy that third story, can get a whole house to itself for about the same rent.

Therefore by our city planning we must see to it that transportation facilities are increased with such regularity and that new building areas are made available in such abundance, that the values of land are kept low enough for the workman to be able to own his own home. Any system of city planning that fails to bring a home owned by himself within reach of the day lab-

order is a bad system, bad for the workman, worse for the community. There is undeniably a spirit of unrest throughout the community, a spirit of change, naturally brought about by the laudable determination of labor to secure and its success in securing a larger share of the wealth it produces. We rejoice that this is so, but we must not ignore the fact that other changes will result. The best assurance that those changes will be made considerately, conservatively and with a due regard to the rights of all, is to make it possible for each laborer to secure a home of his own. But who can foretell the ultimate result of conditions that will generally force workmen and their families into many-family tenements?

Transportation by means of an adequate system of direct thoroughfares, plus an equally adequate system of transit facilities on the surface and below the surface, must be provided, and this is the work of the community. No work more intimately concerns each one of us.

The necessity for this improvement in transportation is voiced in a recent parliamentary blue book by declaring that what is needed is a transit system that offers rapidity of carriage, shortness of intervals between trains, and cheap rates.

The "city plan" was at one time understood to mean the plan of the city streets—the city map of the news stand. It was regarded as an uninteresting, negligible thing. It is now known to be of primary importance in city building. When one street is plotted, two things are done: its distance from or nearness to the nearest parallel street is determined and the depth of the lots fronting upon it is also reduced to a choice within limits so narrow that it is also determined. These results necessarily follow for these reasons: If the street is only twenty feet from its nearest parallel street, a distance that has certain advantages and has been advocated for certain sections where the poorest live, there will be only one lot between them. If the distance is only forty feet there will also be only one lot between the streets. If the distance is 80 feet there may be one lot—or possibly two of about 40 each; if one is larger than 40, the other will be smaller. As the distance between the streets increases, the depth of the two lots will correspondingly increase until the parallel streets are so far apart that a third is opened between them. The prevailing rule in New York is that the streets are 200 feet apart making the lot depths 100 feet deep; and the prevailing rule in Philadelphia is that the parallel streets are from 100 to 150 feet apart, with proportionately smaller lot depths.

The New York rule has worked badly, a large part of the bad result being due, however, to New York's straight jacket. The Phila-

delphia rule, for a city of a million and a half, has worked well. If it were a city of only 50,000 people, the monotonous rows of similar houses would be inexcusable. Even as it is, their monotony could easily be avoided, but their small "oblong-box" formation—like "shoe boxes stood on their sides"—has made it possible for a workman to own one of them together with a yard, and to call the whole thing "my home."

The distance between parallel streets has been shown to bear directly on the lot depths. The distance between the streets that run at right angles to these streets affects, but less necessarily and directly, the lot widths. If an operator wishes to erect forty houses between two streets, their distance apart will affect their widths to a slight extent.

But the widths of the streets themselves have a very important bearing on the housing system. In some of the western cities, the average width of streets is said to be over 100 feet. This takes from the land that might have been used either to support buildings, to make yards for them, or to make public open spaces, an inexcusably large proportion of the area of the city; it invites unnecessarily wide paving at a useless increment in the original cost and in subsequent maintenance; and it increases length of transit, creating cities of "magnificent distances" and malodorous slums. There is not a city in the land where unnecessarily wide paving has not been done on many streets. Numerous streets are too wide and many are too narrow.

One of the best contributions of recent city planning publications has been the discussion of the desirable widths of streets from house line to house line, and the proper subdivisions of their cross sections so as to provide for attractive and beautiful streets, with an elasticity capable of subjecting a greater paving area to the use of the traffic that will be demanded by a minimized reduction in the attractiveness of the streets. The general recognition of the need of wider thoroughfares for traffic, and smaller by-ways for residences, has been one of the conclusions from this discussion that is sure to bear most valuable results, including improved housing conditions on the byways.

But, looked at broadly, the essence of the interest of housing in the widths of the streets on the city map is the amount of space left for building. The percentage of the built-up area of the city

turned over to travel never fails to surprise those who have not investigated the subject. It averages more than one-third. In Washington, the street area combined with that of the parks and the grounds around public buildings reaches the maximum, with 54 per cent of the total area of the city—less than half of the property remains for housing, and for buildings of all kinds. In old Philadelphia the percentage of the street area alone is about 36 per cent. In the region where the two-story house prevails, with the minimum lot of 14 feet by 41 feet, the percentage is 40. In outlying areas the tendency has been to make wider streets, thus increasing that percentage.

In an address before the National Housing Association, the writer stated:

In a particular instance it may be very difficult indeed to trace the connection between the physical condition of the house and the relation the total area of the street system bears to the total area of the built-up sections of the city; to say that 984 "X" Street is bad because 50 per cent of the area of the city is devoted to streets instead of a much smaller area; just as it may be difficult to show that a bad transportation system has contributed a definite amount of evil to that house. But it is equally difficult to say of any one death that it would not have occurred if the death rate of the city had been 5 per thousand instead of 15 per thousand. None of us has that wisdom. But we all have wisdom to know that if the death rate is 15 per thousand when it ought to be and can be; and in some places is, 5 per thousand, then 10 lives per thousand are being sacrificed every year, though we may not be able to say this particular life was so sacrificed. And so in housing, if transportation or the street area is not what it ought to be, we will know that evil conditions in housing generally are due to bad city planning though we may not be able to say that the bad housing at 984 "X" Street is due to it.

Both the width of streets and distance between parallel streets are the result of fashion and cause fashion. It is difficult and perhaps it would be academic, to determine which arises first, the habit of erecting a particular kind of dwelling, and making the lot fit, or the habit of laying out the particular lot and making the dwelling fit. In New York, did the 100-foot lot cause the building, or the building the 100-foot lot? Here we can answer. The plasterer who laid out New York above 14th Street with his trowel placed at right angles to the position it should have had, determined the lot depth, and the house had to be made to fit it. But how about elsewhere? What caused the two-story house on the average 14 by 50-foot lot

in Philadelphia? Which came first? Was it the city plan that caused the fashion, or the fashion that caused the city plan?

The inquiry into this subject would be interesting, but it is not so vital, being historical, as the inquiry whether the city plan can turn a bad fashion into a good one. I believe in the long run it can. This appears indeed to be in the proving in England. "Garden cities" are laid out primarily to surround each house or each unit by gardens. More space was required for houses in comparison with the area of streets. The street map was therefore affected and a new system had to be adopted. That new system in turn created conditions that defied old methods of building workmen's dwellings—a defiance that doubtless can be overcome by economic demands—but, nevertheless, a defiance that has for the time being put fashion to flight. I believe that a garden city scheme of streets would ultimately break up the Boston three-decker and then eliminate it, and that it would break up the monotony of the Philadelphia two-story home and then improve it.

The street system has one phase that is unusually interesting and difficult to handle. This is the change that is constantly taking place in the centers or sub-centers of cities. The housing area is continually surrendering to the business area, and the system desirable for the one is not that needed for the other. "The only permanent thing is change." To meet these conditions, the only feasible plan is to secure the main thoroughfares and then to permit the obliteration of minor streets promptly when need arises. Reconstruction will be a continuous need—and a continuous source of great strength and betterment for the city.

There is an object that is aimed at in English town planning that depends for its ultimate success either on the more or less Utopian idea of many small towns or on decided improvement in transportation. This is the fixing of the legal maximum number of houses at twelve to the acre. How great a revolution this would be is shown by the fact that in London there are some areas where the houses are 54 to the acre. In Philadelphia they are over 42 to the acre in the region of the minimum 14 by 40-foot lots on the minimum street of 40 feet width. If this number of houses were to be spread out to be only twelve to the acre, the amount of ground covered would be three and a half times as great—an improvement that would be wonderful. But the cost of transportation would be greater. The

car service would be over a longer route. The long rider would ride farther, and the short rider would also ride farther. The cost of the sewer system, and of all the street works would be greatly increased. I do not mean to say that a decided reduction in the number of houses per acre cannot be secured. We are working toward that end. I merely cite the difficulties, to show how intimately city planning and housing are bound up together.

The sewer system is of course a fundamental, both of city planning and housing. So is the water system. The house is the physical meeting point of the three problems, water supply, housing, and sewage. Water enters, or ought to enter, the house as pure water; it leaves it as sewage. In Philadelphia the largest physical need of housing is the construction of \$6,000,000 worth of sewers. All cities should prevent the erection of houses until the water and sewer pipes have been laid. This can be done by direct legislation as an exercise of the police power. In order to avoid unnecessary hardship, in cities where this is not now law, the requirement should be introduced gradually.

Height and open space regulations concern both housing and city planning. If buildings cannot expand laterally they will grow perpendicularly—hence New York. Conversely, if you limit their heights, they will expand laterally—hence they will cover more ground for which the plans of the city must consequently be prepared. Each subject is of vast importance. But space prevents their adequate consideration here. Suffice it to say that, so far as the limitations of the heights of tenements is concerned, that will doubtless be covered by other papers in this series. So far as the limitation of the heights of office buildings and other structures is concerned, that is mainly a matter of city planning, affecting housing conditions chiefly as it affects transportation. If a vast aggregation is to work on an area half a mile square, the greater part of the day-time population of that area will have to travel farther than if the aggregation were spread out, or were broken up into a series of much smaller aggregations. It should be borne in mind also that the living conditions of men and women are just as important in the day-time as at night—in shop, or office, as in home or flat. It is becoming generally agreed that the percentage of lot not occupied by buildings should depend on the height of the buildings. So far as city planning is concerned this will affect the area that the city will cover.

The limitation of the number of houses per acre and of the height to which each may reach is made by the German zoning system to depend upon the distance from the center of the city. The area contained within each successive mile zone is much greater than its immediate predecessor, as it has a much greater perimeter. Hence the distribution of the population by these processes does not in fact increase the transportation difficulties in the direct ratio of distance from the center of the city. The German zoning system has yet to be tried in this country, though acts to legalize it were introduced in the Wisconsin Legislature during the past year. The case of *Welch vs. Swasey* (214 U. S.) in effect upheld the districting of Boston into four zones so far as height regulation is concerned. In Pennsylvania, cities may secure forest belts. News from California, which I have not yet had the opportunity to substantiate, is that a zoning of Los Angeles for certain purposes has been upheld by the state supreme court. The nucleus of the idea is thus already Americanized.

The duty of the housing expert and of the city planner alike is to see to it that the city population of the future, when it is twice as large as at present—a time less than thirty years off—is spread over more than twice the area of the present city. The whole tendency in the opposite direction is toward concentration. It is our duty, and our great opportunity of service, to secure expansion. The introduction of the motor truck, the building of well-designed ornamental elevated railroads in the suburbs, the use of all devices for spreading the population that can be invented, must be brought to bear. There is no reason why success in the solution of this vast problem cannot be secured.

THE TOWN-PLANNING MOVEMENT IN AMERICA

BY FREDERICK LAW OLMFSTED,
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Some appreciation of the possibilities and advantages of town planning has been current in America from early colonial times. The very act of founding a new settlement in the wilderness emphasized both the solidarity of the community—the dependence of the individual upon the success of the town as a whole—and also the importance of planning not merely to meet the temporary circumstances but rather those of the expected future town conceived in the imagination.

It is the combination of these two ideas which constitutes the town planning point of view, as distinguished on the one hand from that of the separate uncoordinated planning of the several fragments that make up a town, and on the other hand from that of living from hand to mouth without any deliberate and far-seeing plans at all.

Unfortunately, the conditions of frontier life at the same time made enormous demands upon the energy of the settlers for meeting their immediate necessities. As a practical result, in those communities where the initiative and control were vested in the settlers themselves, as at Boston, Hartford and New Amsterdam, the time and attention which the people actually devoted to planning for the remoter future seem to have been nearly as scanty as in the later period of more settled and stable conditions, when the possibilities of town planning became less obvious and imagination less active. In the case of settlements where the initiative and control were centralized in proprietors, especially non-resident proprietors, the claims of town planning were not so driven to the wall by the pressure of immediate necessities; and we have in William Penn's Philadelphia plan of 1682 an example of deliberate planning for a town of large size with systematic provision for the streets, public recreation grounds, public market places and wharves required by a population considerably greater than was to be expected within a single generation. It was only a more notable example of a sort of planning of "fiat" towns that has been by no means uncommon throughout our history. Of course, the most conspicuous example of this type, the one planned with the

most liberal estimate of future growth and needs, and upon the whole the best of them all, was Washington, planned in the last decade of the eighteenth century.

Leaving Washington aside, most of our prosperous towns comparatively soon outgrew any plan they may have had at the start and, without the dramatic stimulus to the imagination given by the act of founding a wholly new settlement, it was very seldom indeed that any effective effort was made to face the problems of extension and growth in the town planning spirit.

The town planning movement, as a distinct, self-conscious activity with a literature of its own, is very recent in America. A glance through the titles assembled under this head in the Library of Congress shows only scattering items before 1890, a considerable output during the last decade of the nineteenth century, and quite a river of publications, both fugitive and permanent, bearing dates since 1900. This river is composed of a number of streams of varied origin and character still running side by side without quite losing their identity, and for the most part traceable through independent courses far back of 1890. I can only point out a few of the important landmarks along these converging lines.

Throughout our history, in towns which were outgrowing the effective capacity of their permanent facilities for the transaction of business, especially the capacity of their streets and other parts of the transportation system, the planning of extensions and improvements has been of two kinds, private and collective. The street extensions, with rare exceptions, have been privately planned by or for the owners of land, to afford local means of access to lots, with varying degrees of intelligence as to purely local interests and with only occasional regard for the needs of the community in respect to main thoroughfares. Where the growth was most rapid, in the two cities of New York and Philadelphia, the inevitable defects of private street platting first became conspicuous and first led to strong constructive public action. A brief review of public planning in those two cities will indicate the solid foundations of the recent popular movement.

An act of the colonial assembly of February 24, 1721, provided for "surveyors and regulators" to establish streets and building lines in Philadelphia. The number of these officials was increased both in Philadelphia and the adjacent municipalities and their duties gradu-

ally broadened till the consolidation act of February 2, 1854, which created the department of surveys covering the enlarged city of 129 square miles. This was divided into twelve survey districts, each in charge of a "surveyor and regulator," who together formed the board of surveyors under the presidency of the chief engineer and surveyor of the city. This board, with its predecessors and its successor, the bureau of surveys, has had drastic powers of initiative and control in planning new streets, and I think I am right in saying that Philadelphia is the only American city in which, until recent years, such a permanent representative of the community has exercised a dominant and continuous control over the development of the street system. Its duties have covered the planning of sewers and bridges, but it has not had the authority or until very recently assumed the duty of taking part in any planning for the location of parks or of lands needed for other public functions, or the duty of considering the intimately related problem of facilities for rail and water transportation.

Comprehensive planning in New York proceeded until much later upon the spasmodic method of a "once for all" plan without provision for systematic revision and extension. The celebrated act of April 4, 1807, created a temporary commission of three, with power to lay out streets, roads and public squares. In many respects the plan of these commissioners was a bad one, and it is the fashion, in view of the enormous growth of New York, to belittle their conception of the problem that faced them. In fact, they had a remarkably broad outlook. They felt it necessary to apologize in their report for having provided for a population "larger than was anywhere gathered together in one place this side of China;" and at a time long before the extraordinary urban development of the nineteenth century had proved the need of systematic provision for public outdoor recreation in cities, they interpreted their authority to lay out "public squares" so liberally that during the next three generations shortsighted and selfish land owners were kept busy in procuring the passage at Albany of successive special acts, curtailing and omitting the public open spaces they had provided.

It seems extraordinary with the rapid growth of other American towns, with the example of Philadelphia, and with the less admirable but suggestive example of New York, that comprehensive official planning, at least of the streets, should not have made more rapid

headway. Landmarks in that line of progress are the Boston board of survey act of 1891 and the Baltimore topographical bureau ordinance of 1893, both of which were similar in essentials to the Philadelphia scheme. The failure to cope with the problem earlier is presumably chargeable to the general weakness and corruption of municipal government in America during the nineteenth century.

In New York, parallel with the history of the plan of the commissioners of 1807, there was early created a tolerably strong municipal control of the development of the commercial water front and the adjacent streets through a permanent city department which has from time to time taken a broad view of its duty to plan for the water terminals of the city as a whole, has brought a large proportion of the water front under municipal ownership, and has recently risen to a clear conception of the relation between the water terminals and the railroad terminals as parts of one great transportation unit. Until very recently practically all other American cities, with the exception of river ports which maintained public wharves along the levees, left the development of water terminals to private initiative, under such control as the federal government might exercise in the interest of general navigation.

Sewerage and water supply have been dealt with by New York, and by most other American cities so far as they have faced them squarely as municipal duties at all, as distinct problems, planned independently of any planning for streets or other features of the city, accepting the latter as fixed factors so far as they were definitely determined and ignoring their probable future extensions and changes. Essential as the elements of water supply, sewerage and drainage are to any comprehensive city plan, the planning of them runs on today in many places almost independent of other city planning work, and has had little influence on what is commonly known as the town planning movement.

There is another element of the physical city, the public importance of which began to loom up much later than those mentioned above, not, in fact, until the latter half of the nineteenth century, but which has played a very decided part in the development of town planning. I cannot here undertake even to sketch the history of the modern public parks movement. After a surprisingly brief public discussion, about 1850, the people of New York City made up their minds to have an adequate park, and owing to the bad polit-

ical situation in the city, a state board, called the commissioners of the Central Park, was created to carry the idea into effect. The work of the board was rapid, efficient and popular, and the creation of the park stimulated people's imagination as to the entire subject of the city's development, especially on the esthetic side. The commission and its landscape architects set forth the desirability of other park developments in upper Manhattan and of connecting thoroughfares of a more or less parklike character. At the same time, the growth of the city was beginning at a few places to reach toward the limits of the plan of 1807. In 1860 the Central Park Commissioners were authorized to prepare a plan for the city north of 155th street, with powers like those of the commission of 1807. This was in effect what should have been done many years before, placing upon a permanent board the duty of revising and extending the city plan. Subsequent enactments gave them power to alter and develop the plan in certain other parts of Manhattan Island, and in 1869 the powers were enlarged and extended over Westchester County to the Yonkers city line, and they were given an absolute veto power over practically all public improvements in that district pending the completion of their general plans. Their duties were specifically made to include the design, not only of streets, public squares and places, but sewerage, drainage, water-supply, the improvement of the Harlem River, etc., and bridges, tunnels and means of transit across and under the same.

Chapter 534 of the acts of 1871, continuing these town planning powers in the department of public parks, successor of the Central Park Commission, is important, because it added the duty of planning for railroads "and similar modes of communication and transportation," and also for pier and bulkhead lines. I believe this is the first instance, at least in America, of the official recognition that the planning of railroads is an essential part of the planning of a large city; and the preliminary plan for main thoroughfares in the twenty-third and twenty-fourth wards of New York, prepared under that act by the writer's father and J. R. Croes, which showed not only highways but a system of rapid transit railroads free from grade crossings with the streets, is the earliest city plan I know that squarely attempts to deal with the bigger transportation problems of a city from the public point of view. Up to that time, and for a good many years after, the planning of street railways and rapid transit lines,

as well as of the terminals of long-distance railroads, was done almost wholly by the concerns engaged in operating these public services, little if any in advance of the time when extensions were demanded by increase of traffic and under the handicap of accepting a layout of streets designed without regard to rail transportation and very ill adapted to the purpose.

This plan for upper New York was lost to view in subsequent shifts of administrative authority and in compromises with local interests, but is none the less a great landmark in the development of town planning. It marks a point in respect to planning suburban areas which has not yet been fairly reached in this era of public service commissions and popular interest in the subject.

Out of the town planning work of the New York park department grew the establishment of the commissioner of street improvements of the twenty-third and twenty-fourth wards, in 1891, and out of that, under the charter of 1897 for greater New York, a bureau charged with the completion of the plan of the entire city at least in regard to the streets and parks, a duty which was partitioned in 1902 by a new charter among five separate bureaus for the several boroughs.

From the period of the '60s and '70s, when the minds most influential in this city-planning work were those of Andrew H. Green and Frederick Law Olmsted, there was a narrowing of the conception of city planning in New York, in which a loss of regard for the esthetic aspect of the work was but one element. There was, however, an apparent gain, at the time of the great consolidation, in bringing the entire territory of the city under the jurisdiction of the planning agency. Another turn of the wheel, in December 1903, brought forward a temporary additional commission that was charged with the staggering duty of preparing in one year a "comprehensive plan for the improvement of New York City;" and that made a report, dated December 14, 1904, in which the esthetic element was as clearly over-emphasized as it had been under-emphasized in the current routine planning.

While the park movement that sprang from Central Park, so far as concerns its immediate local influence on city planning in New York, thus spent its force during the '70s and '80s without accomplishing all that it once promised to do, its influence upon the rest of the country was widespread and powerful. Public parks were

undertaken very generally; and particularly in Boston, to which Mr. Olmsted removed in 1880, the conception of a comprehensive system of inter-related parks, parkways and local recreation grounds was rapidly developed. The first local recreation ground, equipped with running track, apparatus, field houses and trained attendants, was developed in Boston in the '80s, and slowly the idea took root elsewhere, bringing forth its most notable fruit in Chicago some twenty years later. In 1892, Charles Eliot's conception of acquiring for the public of a metropolitan community a great system of large outlying reservations took form in Boston, suggested by a study of the accidental availability of state and royal forests and large outlying commons around Paris and London, just as the acquirement of interior city parks had been largely suggested to an earlier generation by the smaller royal parks that happened to have been engulfed by the growth of London.

Throughout the same half-century, while the park movement was spreading, the group of landscape architects which it had developed was also influencing town planning through numerous suburban land subdivisions designed for private companies, in which deliberate effort was made to secure and maintain attractive and picturesque conditions for suburban life. At the same time there had been an enormous development in the numbers and in the skill of architects, with a corresponding improvement in the artistic standards of building, and in the influence of the architectural profession. The idea of applying deliberate design, by skilled designers, with a view to securing a maximum combination of convenience and beauty in the surroundings of daily life, was becoming widely familiar. Municipal affairs, on account of their generally unsatisfactory condition in the midst of general progress, were drawing a constantly greater amount of intelligent study. The political, the economic and the esthetic problems of municipal work were vigorously discussed by many organizations formed in the late nineteenth century of which the National Municipal League, the American Park and Outdoor Art Association, later merged in the American Civic Association, and the Municipal Art Association and Architectural League of New York City were leading examples. During the same period a group of effective writers upon these and kindred subjects began to increase the literature of town planning very rapidly.

On the artistic side, the Chicago fair of 1893 was an immense

stimulus to this popular movement. Soon after this Glen Brown, in preparing his history of the United States capitol, rediscovered, as it were, L'Enfant's original plan of Washington, certain architecturally striking features of which had been entirely lost to view, and he brought the plan as a whole to public attention. The time was ripe for its appreciation as a great work of constructive design, and in turn it further stimulated the interest, especially of architects and landscape architects, in town-planning matters. The American Institute of Architects devoted their convention at Washington, in the hundredth year after the establishment of the seat of government there, to the plan of Washington. The rapid growth of the city had forced Congress to provide, in the early '90s, for the extension of the street plan beyond the original limits of Washington, for which purpose an organization with powers like the Philadelphia bureau of surveys was created; and in 1902 a committee of experts appointed by the senate committee on the District of Columbia made a report upon desirable improvements in the park system of the district, including the development of the neglected central portion of L'Enfant's plan. This report, while dealing with only a very limited part of town planning, had a wide and powerful influence, and may be regarded as the parent of a long series of local reports during the following decade, touching upon town-planning subjects with a strong tendency to emphasis on the esthetic side, especially on parks and the grouping of public buildings in "Civic Centers."

Three more important sources of the present town-planning movement must be mentioned even in this brief sketch.

At the time when the New York park department was working upon the plans of the northern part of the city, with a conception of town planning at least a whole generation in advance of the public opinion of the day, the Prussian government adopted a law enforcing comprehensive city planning in many German cities. They went at it in a systematically thorough German fashion, and planned themselves up to the hilt. In some respects they did it very badly, as people are apt to do when set to work designing things by main force instead of in response to a need felt by themselves. But as the time went on, the cities not only of Prussia but of other German states, which adopted the method, learned by experience and study, and they accumulated an immense store of valuable information, literature and examples. All this could not but have some influence on America

when interest in the subject grew keen, and its influence has been powerful during the last fifteen years. The influence of other European countries has been considerable, especially that of France through the popular impression of Paris and other French cities on American travelers and through the powerful influence of French schooling upon our architects. In England town planning began to come into its own hardly as soon as it did in America, and did so largely as the result of the German example held up to view by housing reformers and others interested primarily in the social and economic aspects of town planning. Its growth there has been vigorous and healthy and sane, and the recent English influence on the movement in America has tended to overcome a passing excess of emphasis upon the more superficial esthetic aspects of the subject.

Another and stronger influence in the same direction has been that of our own housing reformers and social workers, to whom was mainly due the calling of the first national conference on city planning in Washington, in 1909. They are absolutely right in their contention that town planning should first regard the total influence of what is proposed upon the character of dwelling in which the ordinary citizen will live and upon the immediate surroundings of that dwelling, and only second the economy and perfection of the facilities for those public functions that affect the citizen less intimately.

Finally, during the last twenty years the conviction has steadily grown that the entire apparatus for rail transportation in a city—street railways, rapid transit lines, and the so-called terminal facilities by which long-distance railroads exchange passengers and freight with the local transportation services and shippers—should be developed comprehensively as one enormous complex machine in the interest of the whole community which it serves, regardless of the subdivision of agencies employed to construct and operate the parts; and that the planning of the parts of this vast machine should not be left wholly to those representing independent groups of stockholders in the diverse operating companies. Among the fruits of this growing conviction are the public service commissions, the active participation of municipal officials aided by expert transportation engineers in the final shaping of plans advanced by public service companies, and a considerable number of studies in the constructive planning of such facilities undertaken on their own initiative by representatives of the public. One of the most notable of the

latter in its comprehensive character, although not as yet in its practical results, is the report of George R. Wadsworth to the metropolitan improvements commission of Boston in 1909; but the tendency is shown in a series of reports on the traction situation of many cities by B. J. Arnold and other experts.

The rapid growth of the town-planning movement as such is strikingly indicated by the number of official commissions on the city plan, or official bodies bearing some closely similar title, which have recently been created in the United States, as follows: Hartford in 1907; Chicago in 1909; Baltimore and Detroit in 1910; Jersey City, Newark, St. Louis, Pittsburgh, Philadelphia, Salem, Mass., and Lincoln, Neb., in 1911; Trenton, N.J., in 1912; and Cincinnati, O., Scranton, Pa., Schenectady, N. Y., Paducah and Louisville, Ky., Lawrence, Pittsfield, Fitchburg, Waltham, Lowell, Springfield, Northampton, Malden and Adams, Mass., and New Haven, New London and Bridgeport, Conn., in 1913.

If the above general account of the town-planning movement in America is fragmentary and confused, it but partially reflects the multiplicity of the currents which have been converging to form that movement and which are surely destined to combine more firmly and with better balance toward the realization of the purpose that impels them all, the making of our cities more convenient, economical and agreeable for the millions that work and live in them.

THE STREET LAYOUT

By B. ANTRIM HALDEMAN,

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The street layout may seem, to the layman and to the citizen who gives little serious thought to the physical development of the community in which he lives, to be one of the most commonplace, uninteresting and unimportant of all the many problems of communal growth which have come to be grouped, for convenience, under the term "town planning;" and yet, it can scarcely be successfully disputed that the street exercises a larger influence upon economic accretion and expansion than any other feature of the town. If there is one class of improvements which is more necessary, which becomes more permanent and unalterable, or which exerts a stronger influence upon the individuality and general physical aspect of the city, than any other, it is the layout of the streets. A map of a city is necessarily a map of its streets and no written description of a city can be visualized or be made fully intelligible unless it conveys a clear understanding of the layout of its streets. The street layout determines, in a very large degree, how the people shall live, how they shall travel to and fro, how they shall work and play; it has a direct influence upon the character of the home and its surroundings, upon the safety, comfort and convenience of the people, and upon the efficiency of government and the public service.

Only recently has there come to be any widespread interest in this subject. In fact, it has been scarcely more than a decade since public officers responsible for the planning of streets began to regard it as a problem worthy of more than the most perfunctory attention, and still later have scientific and technical organizations found in it sufficient importance to warrant their giving space to it in their discussions or their publications. From a condition of obscurity and neglect, as a problem in practical economy worthy of analytic investigation, it has rapidly risen to recognition as a fundamental element in the modern practice of town planning which, quite recently, has reached a position of such commanding importance as to call into existence a new school of specialists to meet the de-

mand for a more scientific and efficient solution of the complex problems which have been created by the intensive growth of great cities.

It is true that streets have existed in some form wherever human beings have congregated in communities since the creation but only in cases where a city has been planned under autocratic authority having in view some special purpose that was reasonably certain of accomplishment has a street layout been established with the intelligent care and foresight that enabled it to properly fulfil its functions and meet all the burdens laid upon it. Even in those cities designed to be the capitals of mighty nations, to glorify the power and vanity of monarchs or to gratify the whims and caprices of kings and princes only so much was planned comprehensively as lay within the immediate needs and purposes of the scheme, and growth beyond those needs and purposes was left to chance.

If we care to trace the history of city building down the centuries we invariably find that during those periods and in those nations where science, literature and art exercised their greatest influences the street layout of cities was more regular and formal than during those periods when the culture and refinement of civilization were at a lower level. The formal, dignified, and in many instances spectacular, planning that characterized the classic period of Greece and Rome suffered a decline during the Middle Ages and the cities that had their origin or achieved considerable substantial growth during the long and stormy period between the fall of the Roman Empire and the rise of the Renaissance present a condition of irregularity verging upon chaos. The Renaissance brought with it a revival of formal planning but the street layout, then as now, resisted innovations more stubbornly than did other forms of urban improvement and it was not until long after the first colonies were planted in America that whole cities began to assume the semblance of great checkerboards. The Renaissance also brought with it, as the natural concomitant of the straight line street, that most monotonous and unlovely conception known as the "row" house which grew out of the invention of giving a row of separate houses the appearance of one vast building through the artifice of a uniform façade extending an entire block surmounted by a mansard roof.

The modern city, no matter what its activities or the impulses of its growth may be, requires a layout of its streets quite different from that of any city of the past. The conditions of urban life and

the needs of urban growth have changed radically with the wider diffusion of industry, education and wealth, and with the increasing tendency of the people to congregate in vast communities. There is little probability of any effective check being put upon the drift of the people to the cities so long as the country fails to provide opportunities for business and social success and for legitimate recreation and diversion relatively equal to those of the city, and if cities are to continue to expand and increase in population as rapidly during the next few decades as they have in the past, new measures for controlling, regulating and directing their physical growth must be established and enforced, and among these new measures none will be more necessary or exert a more far-reaching and beneficial influence than those directed toward more efficient and economic street planning if administered by courageous, skilful and wide-visioned public officials.

Excepting the recent work of the new school of city planners and a few isolated instances of much earlier date, nothing in all the science or art of city building in America, whether it be of much or little consequence, has received such scant consideration as the street layout. Although street planning in Europe seems always to have been esteemed a matter of importance, its history in America is a record of thoughtless, inconsistent and unreasoning acts, and the plans evolved require little more than a hasty glance to arouse a strong suspicion that the street systems they represent were of accidental or mechanical origin; that they were laid out by property owners in the manner believed to offer the best immediate returns in the sub-division and development of individual estates or by public authorities who arbitrarily applied the simplest and easiest method that suggested itself to them and enabled them to plot the largest area in the least time and with the least labor possible; and that in neither case was there any attempt to forecast accurately the future needs of the street or the territory it would help to serve or to investigate the probable efficiency or economy of the general layout.

The city planner who approaches the problem of extending and revising the street system of a city with a view of applying both science and common sense to its solution quickly learns that forecasting the mysterious probabilities of the future is less appalling than the task of correcting the errors of the past. The difficulties in the way of correcting past errors do not lie in the lack of wisdom,

skill, or courage to perform the work successfully so much as in the physical and financial obstacles to be overcome, and in the hesitancy to assume the responsibility for the temporary destructiveness and large initial cost involved in the undertaking.

There are always sufficient data obtainable, if collated in an intelligent and painstaking manner, to give the planner a fairly accurate basis upon which to work out a scheme of replanning which will be fully adequate to correct the evils that have resulted from careless and haphazard work. A thorough and systematic study of the physical condition of a city, of property values, of the distribution of business, industrial and residential areas, of the health of the people, of the mediums and facilities of circulation, and of the volume and directions of the currents of traffic, is of the greatest importance as an aid to efficient and economic replanning. The collection and systematization of data of this kind in a form available for practical use are, in themselves, an undertaking requiring patience, time and skill, but they afford the only rational and safe basis for working out the problems of reconstruction which now confront most of our large cities, and it is possible to reduce them to a systematic process, uniformly applicable to the investigation of the needs of any city.

It does not appear, however, that any fixed rule or principle, based upon practical experience or exhaustive investigation, can be established for planning streets, either singly or as systems, for a new town or for the extension of an old one. Here lies the planner's opportunity to give free rein to his imagination and his individuality, here is the test of his genius, judgment and common sense, here his powers of prevision and of prophecy are brought into service untrammeled by masses of figures and statistics; he is not called to prescribe a cure for an existing ill but to peer into the future and create something that time will applaud or condemn and he must solve his problem without any very tangible data to guide him, unless it be the desire of a client to accomplish some well defined object.

Much of what is considered good modern planning is done by "rule of thumb" in order to produce speedy results, to conform to some ingrained prejudice, or to carry out some favorite practice. The application of new theories, no matter how rational or well grounded they may seem, is often confronted by many obstacles; it

is sometimes difficult to convince those in authority that a radical change of practice is necessary, or even advantageous; long standing custom is difficult to overcome; local conditions and local sentiment, whether favorable or unfavorable to good results, exercise much influence; the depth of lot that has been customary in a community, whether or not it is suitable for the best form of development, is permitted to regulate the distance between streets and certain street widths have become a confirmed habit too deep-seated to be easily reformed; real estate interests often dominate the situation and the profits of speculators and builders must receive first consideration. These and many other influences often hamper the planner and prevent him from establishing the system which his best judgment, after a careful study, points out as the one best adapted to the case before him.

Many street layouts have been put upon paper, and even officially adopted for the purpose of development, which indicate a desire to produce an attractive and mechanically well proportioned plan rather than an effort to obtain really efficient results; in other instances theories have been applied which are popular at the moment but which may ultimately result in conditions which future generations may find just as oppressive and as difficult as those which now confront us. In the present zeal for comprehensive planning there is danger that cities may undertake to execute ambitious and costly plans which look well upon paper and seem to possess much real merit but which have received only superficial study by reason of the limited time and funds placed at the disposal of the planner; such plans may produce no better results in actual practice than those that happen accidentally although they will cost much more.

Much has been said and written in earnest advocacy of maintaining the individuality of towns and the individuality of a town is influenced to a marked extent by the street layout. Individuality is an element that does not yet seem to deserve great consideration in American cities; their rapid and undisciplined growth, the constant wrecking and re-erection of buildings, the conversion of the character and use of whole neighborhoods and the lack of stability and dignity of their domestic architecture have prevented them from achieving much that is distinctively characteristic or worth the effort to perpetuate. For individuality worth preserving we must

revert to the communities that have not entirely lost the atmosphere of colonial days by destroying the last remnants of their colonial architecture and covering their "village greens" with workshops.

Some tendency is being shown in American street planning toward the adoption of the medieval street in some of its forms and also the schemes suggested by the garden cities and industrial colonies of England and Germany. Such layouts approach the ideal for small self-contained and proprietor-controlled communities but their adoption in large and rapidly growing industrial cities, or in cities where there is a constantly shifting ownership and use of land and a periodical, and sometimes radical, change in public policies and administration, should be undertaken cautiously and conservatively. The plea for the medieval street lies in the opportunity it gives for picturesque effect, and picturesque it most truly is when we find it within the rugged walls of an old feudal city, wandering aimlessly between solid rows of quaint and many gabled buildings gray and bent with age, and full of an atmosphere of mystery and romance. Whatever of verity there may be in the plausibly argued contention of the town-planning savants that the picturesque chaos of the medieval towns of Germany and Italy is the perfect result of deliberately worked-out design, and however much we may delight in threading the narrow and devious courses of those quaint and captivating highways and byways, it is doubtful whether any attempt to reproduce them or adapt them to the needs of the modern industrial community under modern social and political conditions is desirable or commendable or could be fully successful; they belong to and are a part of a picturesque and romantic, although stern and strenuous, period of the world's history and should be permitted to remain exclusively characteristic of that period, since any attempt to reproduce them with modern architectural settings will probably result in unsatisfactory imitation at best and is certain to corrupt the well deserved admiration we hold for the pure, original type.

The street layouts of the garden cities, co-partnership tenants and industrial communities of England and Germany have found many earnest admirers and enthusiastic advocates in our own country and there appears to be no doubt that their application to limited and self-contained areas has proved eminently satisfactory. Before such layouts can be safely introduced into the planning of our large

and rapidly spreading American cities, however, it will be necessary for our municipal authorities to have complete control over the laying out of streets and the subdivision and use of private property and to exercise that authority with the utmost discretion and impartiality. Very many difficulties of administration and maintenance, which could scarcely be successfully managed under our present methods of municipal government and individual ownership and control of land, would occur if we should attempt such planning as we find in the garden cities. In those communities the tenants are a selected class, do not acquire actual ownership of land and are always subject to the strict rules of a governing body in the care and use of the property they occupy. This permits the enforcement of a uniform and thoroughly effective system of maintenance; such a system of supervision and maintenance would not be possible in a large community where the owners or tenants, or both, change frequently and where neither may give active aid in keeping up the character or physical condition of a neighborhood. The narrow ways, dead-end streets, alleys, enclosed courts, allotment gardens, secluded open spaces and other features which contribute much to the financial success and physical enticement of the garden cities would, by their nature, make them an easy prey to degenerative agencies and permit their rapid deterioration to slum conditions were it not for the constant vigilance and thorough supervision of the managers or trustees of the estates. Until the same perfection of control and upkeep can be exercised the experiment of applying garden city methods of planning in American cities should be undertaken very cautiously.

Of virtue no less doubtful than the grafting of the feudal street or the garden city layout upon the metropolitan city is the street system where travel never has an opportunity for reaching its destination by a direct route, but must accommodate itself to the necessity of changing its direction at every forward move. No feature of the new street-planning practice is overworked, maltreated or misapplied so persistently as is the curving street. It has a legitimate mission and an undeniable charm when justified by the topography, cast in an appropriate setting, or skilfully introduced either as an incident or a special feature of a general scheme; but when applied indiscriminately and arbitrarily with the sole object of a presumed beauty and without any guarantee that that object will be fully

achieved in the development of abutting property, it loses all force or reason for its creation and becomes less desirable, more wasteful, and more productive of nuisances and misfits than even the despised checkerboard.

All successful street planning is predicated upon the skill and fidelity with which the planner co-ordinates the three fundamental purposes of the plan and makes ample provision for every form of transportation and circulation, provides for the most advantageous development of property for its various uses and creates opportunities for the expression of civic art. The needs of transportation have generally been ignored, or subordinated to the profits of land speculation, but we are beginning to realize that the first requisite for the healthy growth of the modern city is rapid transit and easy and direct routes of communication.

Nothing has contributed so largely to the increase in the importance and usefulness of the street as the rapid development of the forms and mediums of transportation, and street-planning methods have not nearly kept pace with its normal requirements. The twentieth century city is growing much larger and much more rapidly than any of its predecessors and the service required of its streets is vastly greater and widely different from that which was required of the streets a century ago when they were given over chiefly to the use of pedestrians, beasts of burden, and the comparatively few clumsy and slow moving vehicles most of which were only two-wheeled. The character, volume and rapidity of present-day traffic make the adoption of scientific methods of street planning necessary if real efficiency and economy are to be obtained. The old practice of laying out a more or less regular system of streets of uniform width at uniform distances apart and paving them as driveway or sidewalk for their full widths is wasteful of land and imposes an unnecessary cost for construction and maintenance. Instances may be found in every city where certain streets by reason of having better approaches or more direct connections to important points or by passing through more lively or attractive environment carry a great amount of traffic, while adjacent paralleling streets of equal width carry very little; this is particularly noticeable in residential sections and those sections outside the zones of business concentration. It is human nature for people to wish to be among their fellows and even in crowds and whether walking or riding they prefer

to move slowly through a busy thoroughfare rather than seek greater freedom of movement by going a block or two out of their way.

All the great cities that have experienced rapid growth in comparatively recent years have achieved that growth, directly or indirectly, through the agencies of modern industrialism. The tremendous development of industrial and commercial activities during the past half century has been made possible only by the swift progress that has been made in improving and extending the facilities for transportation. The carriers of the world's trade have bent every energy to meet the demands of commerce on both land and sea, but the people, especially in the United States, acting through the officials in whom they have vested the powers of government, have failed lamentably in enlarging and improving the public channels of traffic, the roads and streets. The city is the workshop and the commercial center where industrialism flourishes and from which its products are distributed over all the world. The city inevitably reaps the benefits and profits but loses much of both through its failure to provide proper facilities for transportation, while private capital and private energy are put unsparingly into larger and better facilities for acquiring greater private benefits and profits.

Our cities should have awakened long ago to the fact that the convenience, prosperity and prestige of all their citizens would be enlarged and enhanced by remodeling their antiquated street layouts and planning their additions and extensions with an intelligent purpose of providing ample, direct and convenient means for the circulation necessary to the highest development of their industrial and commercial activities, just as the great industrial and carrying corporations have extended their zones of activity and increased their earnings by reconstructing and enlarging their plants, by constructing new ones, and by throwing obsolete machinery and equipment upon the scrap pile and taking advantage of every new invention and appliance that spelled progress.

There is no stronger competition today than that which exists between cities for the material things that count for national and international greatness, and, except in those rare instances where a city is so located strategically that industry cannot ignore it or traffic evade it, those cities must inevitably achieve the leadership which offers the widest opportunity and the greatest freedom for the highway circulation necessary to the economic development of in-

tensive industrialism and commercialism, and at the same time controls and regulates the layout of streets and the subdivision and use of property in their residential sections in such manner as will guarantee homes of comfort and contentment among healthful and attractive surroundings for the workers whose energy is the mainspring of industrial progress.

THE SOCIOLOGY OF A STREET LAYOUT

By CHARLES MULFORD ROBINSON,

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It is the triumph of modern city planning that it has learned, and is popularly teaching, the significance of the title of this paper. One who calls to mind the narrow, crowded, tortuous streets in the older parts of foreign cities, realizes how little thought the early builders of cities could have had for "the sociology of a street layout." To them the street was only a way of going, a means of passage. It might be a slit in the wall if so the traffic of the day, perhaps mule-mounted men and burdened women, could squeeze through. That the passage might be sunless, that the liquid sewage of abutting houses trickled down its center, was of no moment, if the broad stones of the pavement gave a foothold fairly firm and one could thread his way, through this and connecting apertures, to his journey's end. What, under heaven, was a street for, but to pass through —like a sickness, a sorrow, or any other trouble?

It means much then, that the sociological significance of the street should be perceived. We still have a great deal to learn with regard to it, and merely as discussion the subject is broader than can be compassed in this brief contribution. Here it can be hoped to do no more than to suggest ways in which the street proves itself a sociological factor. Examples of such influence appear in its effect upon the health of those who live upon it; in its influence upon their economic condition; in its effect on their mental and spiritual attitude, and in its modification of their social relations. Under each of these four general heads, many minor headings must suggest themselves. Yet only hints can be given, lest in the subject's alluring ramifications we lose ourselves amid highways and byways of thought as intricate as was the medieval street plan.

First, then, with regard to health. This was one of the earliest matters considered when the social conscience became aware of its responsibility in the platting of streets. Not all at once, of course, but by degrees, this consideration widened the street, so that sun

and air might get between the rows of houses; it drained the street and put sewage underground; for the sake of safety, it separated footway and carriageway, and paved them both; it lighted the street, and planted trees to temper the heat of summer and the cold of winter; sometimes it provided strips of grass. More lately it has cleaned the streets, has laid the dust, or prevented the making of it, and has greatly quieted the passage of those who use them. There has even come to be regard, when practicable, for the street's direction, so that the house upon its border may have healthful orientation, and that winds of too great violence may not make a funnel of the street.

Once the permanent lines of the street have been established, jealous regard for sanitation discovers the wisdom, or necessity, of relating the building ordinances to those lines, so that the street which has been carefully adapted to a certain kind of structure may not suffer loss of adjustment. The distance between opposite houses is therefore regulated by the establishment of a building line; the height of buildings is, at least in many instances, related, by maximum limitation, to the width of the street; and the proportion of the lots which may be occupied is designated. We are even talking now of restricting the cubic contents of structures to the capacity of the streets on which they are; and already in some cities there is dictation as to the use to which the structures may be put. Quickly we found, that is to say, that the maintenance of a street's sanitary and hygienic virtues was dependent on the regulation of the buildings upon its border. This meant recognition of the street as a site for homes, and not only as a passage.

Nor did concern for the physical well being of those who use the street, and they are especially those who live in it, stop at this. The individual street, however perfect, is necessarily part of a system of streets. Its outlets and inlets connect it with a street organism hardly less complex by nature than is the community whose activity creates it. Hence, the function of the street cannot be to serve simply those whose dwellings are at its edge; though to do only that, it must perform some service to the neighborhood, and must play a part in the life of the town..

We find sanitary considerations affecting, therefore, whole street systems. A single thoroughfare is made broader or narrower, more secluded or more brilliant, according to the sociological duty it should

perform to the town as a whole. Perhaps in a mean and poor environment it is broadened that its strong air currents may freshen the neighborhood; that its tide of life may stifle morbid meditation and hope and inspiration; or that by the directness and facility it gives to traffic, it may greatly widen the available home-building area and lessen the pressure of living. In short, the street has a duty to perform not only in protecting the health of those who live upon it, but in also protecting that of the community. When we talk of the sociology of a street layout, these are functions that we must keep in view, and we must recognize their potency.

The second group of influences which a street exerts upon the lives of those who live about it is, we have said, economic. Once again there is the effect of the street by itself and the effect of the street as part of a system. The degree of its influence under the latter heading varies with the degree of its importance to the system. If it has been platted as a main, arterial highway, designed to carry lines of rapid transit, or by other means to open tracts of building, the measure of its success in doing this is of enormous importance to the economic welfare of the community. A physical inadequacy—due, it may be, to grade, to indirectness or narrowness—might easily add several minutes to the time required to reach a certain section of the town. Such addition might reduce the available building area by hundreds of acres, and raise the normal rate of living in every nook and corner of the city. That the item of real estate goes far to determine the scale of living needs no explanation. The sociological influence of the street layout is obvious.

But even in the case of a most minor street, a street of no general traffic significance and of interest only to those who live upon it, there still is a connection between the plan of the street—its width and the character of its development—and the economic influence it exerts. It would seem plain, and yet we have only commenced to understand, since illustrative instances have multiplied, that a very expensive street compels costly development of the abutting land, by making it expensive. In other words, excessive street cost—whether this be due to unnecessary width or to a needless high type of paving or of furnishing—creates a necessity for high returns. When the people who live on the street cannot separately pay large rents, they have to do so collectively, by herding in apartment or tenement houses.

As a matter of fact it is no uncommon thing for the cost of street development in outlying sections to amount to more than the cost of the land. That is to say, the investment upon which the rents must offer a fair return is doubled by the cost of the street and sewer—and often a large part of the cost is unnecessary. A recent report of the Topographical Survey Commission in Baltimore, where it is usual to pave three-fifths of the normal 66-foot street, i.e., 39.6 feet, points out that if the paved roadway were narrowed from 39 feet (using even figures) to 24 feet, "thereby providing for three streams of traffic instead of five," there would be a saving of \$17,600 on each mile of paved roadway, the paving being figured at \$2 per square yard. Surely an accommodation for three streams of traffic is as much as most minor residence streets require, while the actual saving would be not only in first cost of construction, but through all the succeeding years in maintenance, in cleaning, flushing, etc. The quotation seems worth making, because of the sociological disinterestedness of its source and because it so plainly cites a conservative example only of the extravagances which may creep into street layouts, with dear results economically to those who reside upon the street. Where people have only a certain definite amount to live upon and capital properly requires return on its investment, the platting of a street is by no means a question of simply the street. Tract owners who have forgotten this fact have paid the penalty of their thoughtlessness not less than have the purchasers and tenants of the lots.

It may also be pointed out that the common practice of making nearly all streets similar, in width and in construction, notwithstanding their varying traffic values, is economically wasteful in other ways than simply in the extravagance of the provision. In adopting a mean standard, which is standardization at its best, there are sure to be some streets which are too narrow as well as some which are too broad. Neither arterial nor nonarterial streets are adapted to their purpose. There is misfit all around. Further, the streets that are needlessly elaborate disintegrate through want of adequate use.

Another very serious indirect feature of such platting, from the standpoint of the economic welfare of those who own abutting property, is that stability in values is discouraged. There is no physical reason why business should take one street rather than another. An enterprising property owner, or group of owners, may draw it

out of one street and into another, with a disastrous destruction of values. On the other hand, business may invade a street of fine homes, reducing values for a long period, not to speak of the social discomforts which come in the train of such a change. If a few streets gain in speculative attractiveness, through the possibility of transition from residence to business, many lose in the extended period which the transition requires, and in fact even before it begins, because of its mere possibility. For it is notorious that a man will pay a higher price for a lot on the sort of street he prefers if he can be assured of the permanence of the street's character.

From an economic standpoint, it appears, therefore, that the layout of the street affects very closely those who own or rent property upon it. There is no point, in fact, where the community touches so surely the family pocketbook, for it may be reflected that practically all our assessments and nearly all our taxes are for the construction and upkeep of the street and of the public utilities below and above it. The old plaint of the pessimist, that nothing is sure but death and taxes, suggests that to ward off the former and reduce the latter would be to mend greatly the lot of humanity. If so, there is given to the platter of streets a golden opportunity.

The third direction in which the street was declared to have a social influence, deserving of consideration quite apart from its traffic function, was in its influence upon the mental and spiritual attitude of those who make use of it. One aspect of this was somewhat baldly expressed in the course of a speech by John Burns, before the international city planning conference in London, in 1910, when he said: "Mean streets make mean people." Most of us can think of so many illustrious exceptions to this dictum, that it fails to carry full conviction. And yet it doubtless is true that the dull, dreary monotonous environment offered by countless streets in almost any city must, in the aggregate, have a very depressing effect. If environments can enliven and inspire, they must also have the power to deaden and discourage. We may not know how far the misery of the very poor, lack of ambition and gloominess of temper, may be due to the cumulative influence of disheartening streets.

We have, however, had pointed out to us, by no less an authority than Jane Addams, that much sin and subsequent suffering are traceable to a veritable, and pitiful struggle for existence by the spirit of youth which the community is starving in city streets. This

reckless struggle represents reaction from, and protest against, an enveloping gloom that is unrelieved. It has been said of the joyous Latin races that they find in the street an out-of-doors room. If the poorer of our citizens can pass only from dismal rooms to sadder streets, we must not wonder that lights and music sometimes lure them into dangerous places, or that the voice of the agitator alone awakes an echo in dull ears. The thoughtlessness that has planned and built some familiar types of city streets has, then, more to answer for than emaciated bodies and purses; it is responsible, in part at least, for minds and souls. Little children born into such streets, are grown old while their lips yet lisp; and the pallor that transforms ruddy cheeked boys and girls, who have exchanged the sunny fields for city streets, is but an index of the light that has faded from their hearts.

There is, be it noted, another side to this. The reverse was aptly expressed in Paul's proud boast. The Greeks had a saying that "to make the city loved we must make it lovely." Most of us have seen, too, the transforming effect of a street improvement upon a neighborhood. To take a dilapidated street, and pave it, clean it, light it, and keep it clean, is to effect a local metamorphosis. Front yards are furbished up, houses put in order, back yards and interiors feel the influence of the new spirit. There is born a self respect that promptly manifests itself in dress and carriage. The improved street has, in short, an improved population.

Higher in the social scale a like change has a like result, though less dramatically. Change a street into a parkway, placed in charge of the park commission and elaborately kept up, and you will see lawns better kept, and landscape gardening making its appearance. Of course the interplay of forces in these changes is complex. The effect is not mental alone, but is partly economic. Yet it is all sociological. It testifies to the power of the street in matters that are not at all connected with traffic.

Finally, it would be interesting to speculate on how much the platter of streets may do for people by so aligning his street as to open beautiful views. He may do this by centering it on a lovely spire, a mountain, or other satisfactory ascent; by carrying it around a hill; or by curving it so that front windows may command a charming street picture, without requiring great width of street or dooryard; or even by so altering the line of walk or curb as to save a noble tree.

It is no slight matter to give a person a beautiful picture to live with, and the street platter may give such a picture to many people. After all, in thinking of the street's mental and spiritual influence, we have to remember that for very many people it is pretty much all of the world they see.

We come to the fourth sphere of a street's influence, its modification of social relations. There have been suggestions as to this effect of the street in the discussion of its other influence. Necessarily, there is some overlapping between the groups, since they are headings based for convenience on only predominating characteristics. Rent changes for instance, have not simply economic significance. To force the dwellers on a given street to choose between taking lodgers, abandoning the single family house for the multiple dwelling, or moving away, is obviously to modify social conditions. Yet this may easily be done when the street plan is so altered as to force up rents. Again, to allow business or industry to intrude into a residence section, or to leave any attractiveness of outdoor life to commercial exploitation, or to fill the breasts of a streets' residents with new love of home, all these events mean social changes.

A quite different, and simple type of this kind of influence was illustrated by a complaint from settlement workers that the depth of mud on a certain street effectually shut off the settlement from its opposite neighbors, and for weeks at a time checked, almost to extinction, intercourse between all the people on the two sides of the street. Significant also, from this point of view, was a recent protest against garden city methods on the ground that the people for whom such communities are planned really prefer to live in a closer proximity, where they can stand at their doors and yet talk to their neighbors. "The method of living in sparsely scattered homes," exclaimed this writer, "is profoundly unnatural. There is no need for every house to be isolated as if the whole world were a fever hospital." That is as it may be. At all events, it is clear that not only the garden city movement, but the whole suburban drift, which the street platters so cleverly accentuate, is causing widespread social changes.

The limits of this article permit no further excursions into its still novel subject. The four leads by which we have sought to test the worth of the thesis promise, with even so brief a trial, rich returns. It would seem to be certain that street layouts do exert a powerful

sociological influence, late as we have been in discovering, or at any rate in acknowledging, the fact. That it will have more and more attention in the coming years, we may be sure. The sociologist is becoming a power; and when he insists that streets are created to live on, as well as to offer channels for traffic, and that with some of them the former purpose far outweighs the latter, his hint will be popularly heeded. Meanwhile, it is to the credit of modern city planning that it has perceived this for itself—before the sociologists have spoken with authority.

SUBTERRANEAN STREET PLANNING

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Although much careful study has been given by trained experts to the preparation of plans for the rebuilding and extension of large cities and the laying out of new towns, and to the development and improvement of street systems so as to provide for present and future surface traffic and to best serve the convenience, health and welfare of the people, but little thought has been given to the subterranean street. In only a very few of our large cities has any attempt been made to plan subterranean streets or to chart the structures which they contain.

Underground circulation is as necessary to modern municipal life as surface circulation and the problems involved in its installation and maintenance have become exceedingly complex and difficult as the demand for such service has increased. Surface traffic may be entirely shifted off of a street temporarily, in case of an emergency, without inflicting any great hardship, but underground service, once installed becomes permanent, and any derangement or interference with it oftentimes seriously affects large areas.

But few of the great multitude of people who traverse the principal thoroughfares in the congested parts of any large city have any conception of the great network of structures which have been laid at an enormous cost under the street surface, all of which are necessary to provide the service so essential to meet the demands of modern business and modern methods of living.

To consider the importance of subterranean streets properly, it is necessary to have a clear understanding of their functions and of what they are required to care for. The structures which they contain may be classified under the following heads:

1. Water pipes, sewers, gas pipes, electrical conduits, steam and hot water pipes, pneumatic tubes, refrigerating pipes and an inconceivable number of other structures of a similar character which will be required in the future.
2. Subway galleries for pipes and conduits.

3. Vaults under the sidewalks.
4. Subways for passenger railway traffic.
5. Tunnels crossing the subterranean streets.
6. Subterranean freight service, to connect with railroad terminals, business houses and industrial establishments.

In the growth of a modern city the number and character of underground structures are constantly increasing and changing and it is probable that the future will see the present ones supplemented by others now scarcely thought of. Therefore, in the placing of sewers, water pipes, gas pipes, electrical conduits, pneumatic tubes, refrigerating pipes and other structures necessary for present service, it is important that the available width of the street be utilized to the best possible advantage. This can only be accomplished through municipal control by some official body with absolute power to finally approve the location of every sub-surface structure and to see that each is placed in the space assigned to it. All structures occupying a street longitudinally should be laid parallel with the street lines; where this is done and accurate records kept showing the location, size and depth of all conduits and pipes, maximum economy of space will be obtained and the location for new structures can be determined with accuracy, so that there will be a minimum disturbance of the street surface. Where the records are platted on large scale maps and each structure indicated by a conventional sign, all future planning for the subterranean street is greatly facilitated.

The lack of records leads to great confusion when new services are to be laid. This is especially true when large main sewers are to be constructed or a system of railway subways installed. In such cases, before contract drawings can be completed or intelligent estimates of cost prepared, it is necessary to make at great expense deep excavations across the entire width of the street at intervals of from 100 to 200 feet along the line of the proposed improvement, to obtain information as to the obstacles that will be encountered. Such excavations in a busy traffic street as a preliminary and frequently made months in advance of the actual construction, are a great inconvenience and annoyance to the public. In many leading cities no department of the municipal government has information as to the number and character of the structures laid in its subterranean streets. Philadelphia has been keeping records of its underground works since 1884 and now has a complete system of plans made on a

large scale, on which all structures are recorded; the cost of preparing these plans and of maintaining a corps of draftsmen to keep them up to date is more than met by the charges made to public service companies desiring plans and information to aid in determining locations for new structures.

Subway Galleries for Pipes and Conduits

The breaking of streets for the construction of, or repairs to underground works is one of the greatest obstacles to their economic construction and upkeep and earnest efforts have been made by city officials to reduce this breaking to a minimum by the adoption of stringent regulations. In Philadelphia the board of highway supervisors refuses to grant permits to open newly paved streets within five years after the paving is laid; Cincinnati has a similar regulation, covering a period of three years, and in both cities provision is made to notify in advance all city departments, public service corporations and abutting property owners of the intention to improve the street, so as to give them opportunity to lay or renew underground structures as may be required, yet with all these precautions it is occasionally necessary to tear up the street surface to repair leaks and breaks and to make emergency connections.

The construction of subway galleries to accommodate many of the pipes and conduits would be of great advantage in preventing the opening of the street surface and its attendant interference with the public comfort and convenience. The building of such galleries has never been undertaken to any extent except in Paris and London. The sewers are used to carry many service pipes and conduits in Paris and about $8\frac{1}{2}$ miles of galleries have been constructed in the newly laid out streets of London. In other cities on account of the cost of building galleries in streets already improved and the re-locating of the underground structures in them, municipal authorities have concluded that the expense was not warranted.

Elaborate plans were prepared for subway galleries of this kind at the time the passenger railway subways were constructed in lower Broadway, New York; and later in Washington street, Boston, and it is to be regretted that the work was never carried out. In the city of Montreal at the present time an extensive system of municipal conduits, for wires only, is being placed under the center of

each sidewalk, cutting off all building vaults and restoring to the city the space outside of the conduits for future structures.

Subway galleries should be constructed in newly laid out highways, through densely built-up portions of the city; they should be owned and controlled by the municipality and the public service companies should be required to occupy them with their service lines; if built while the street is being constructed and before the underground structures are laid, the cost would not be prohibitive and the rentals obtained from the public service companies would no doubt largely pay the interest and sinking fund charges on the cost of construction.

Vaults Under Sidewalks

In the centers of intense activity in large cities, particularly along the important business streets upon which high buildings, department stores and office buildings have been erected and on which traffic is congested, many vaults have been constructed which extend under and out into the highway generally the full width of the sidewalk. These vaults are in many cases practically an extension of the basement of the building into public property and are frequently used as boiler rooms from which hot air is ejected through gratings in the sidewalk to the great discomfort of pedestrians using the street. In other cases, safe deposit vaults, restaurants and barber shops occupy the vaulted space—the property owner does not secure from the city a fee simple title to the ground, but only a permit, which is conditioned upon the city having the right to repossess itself of the space occupied at any time when the public good demands it.

These obstructions are a severe tax upon the cross-section and the capacity of the subterranean street to provide space for structures which are necessary for the general public service, and in order to retain for the public the full advantage of the space beneath the street, it will be necessary for large cities, in their business centers and along the line of main traffic thoroughfares, to refuse to grant permits for, or to allow the placing of, any obstructions either on or beneath the surface of a public highway.

Action to regain surface space on streets was taken by the municipal authorities in New York City within the past two years, and property owners on Fifth avenue and other streets in the congested

sections were required to remove all encroachments and obstructions from the legally opened sidewalk, in order that the public might recover the free use of the portions of the street occupied for private use; similar action may become necessary to regain space occupied by vaults and other underground rooms and the confusion and conflict with owners would be avoided if such occupation was entirely prohibited.

Subways for Passenger Railway Traffic

The increase in the urban population of the United States has been much more rapid than in the rural districts, or in the country as a whole. At the close of the revolutionary war only about 3 per cent of the total population lived in what might be called cities. Today the urban population comprises 46.3 per cent of the total population. The great tendency in all our large cities, especially in America, to concentrate business activity has demonstrated the total inadequacy of the street surface to supply space to meet the problems of passenger transportation. It is therefore found necessary to provide passenger subways or elevated railroads to give the people rapid and cheap facilities for passing back and forth between their homes and places of business or from one section of the city to another.

The building of elevated railroads requires the placing of columns in the street and of heavy foundations into the subterranean street, which greatly reduces its capacity for carrying other structures, and where passenger railway subways are constructed the areas required for the subway and the requisite stations are so great that almost the entire available cross-section of the subterranean street is occupied, making it necessary to remove at great cost all or a large number of other structures to adjacent streets.

The building of railway subways has brought a new use for the subterranean street and to meet its demands an exhaustive study is required not only of the underground conditions but of the surface conditions, for the building of subways on narrow streets lined on both sides with costly buildings requires the underpinning of these buildings and entails very expensive construction work and damage to adjacent property. This in some localities may be avoided by opening a new wide street or the widening of an existing street a short distance from the main traffic highway where property is of less value.

Such a new avenue should be of sufficient width to admit of the subway being constructed in the center thereof and avoid underpinning and damage to property. It is probable that in some cases such new street may be acquired and the subway constructed at approximately the same cost as the subway in a narrow street, congested with surface travel and lined with high buildings. In addition, great advantage would accrue to the public by having this new side avenue to supplement its street system; relief would be given to highway congestion on the adjacent streets and opportunity would be furnished to extend the business areas along new lines.

The demands of subways upon the subterranean streets are such that where a traffic line in one street crosses or connects with that in another the intersection must be enlarged to permit such crossing or connection; such enlargement of intersections should also be applied wherever possible to the street surface so as to relieve vehicular congestion. The uses of the surface and subterranean areas are so closely co-related in respect to the needs of circulation that they should be studied and planned together with due regard for the probable future usefulness of each.

Tunnels Crossing Subterranean Streets

Tunnels constructed by private interests to cross subterranean streets to connect the basement stories of buildings on opposite sides result in blockading the streets to such an extent as almost to prevent their proper use for public purposes, and is an occupation of the streets which should not be permitted unless the tunnel is placed at such a depth as to carry it under the structures laid longitudinally and required to conserve the public welfare.

Where tunnels are required for the convenience of passengers who wish to cross from one subway platform to another, the plans prepared for such passageways should make ample provision for all the structures which are to be placed in the subterranean street, and the locations made subservient to the present and future requirements of general public service circulation.

Subterranean Freight Service

The congestion of pedestrian and vehicular travel on the surface of the important business streets of a great city can unques-

tionably be greatly relieved by providing for the transportation of merchandise and freight to and from the railroad terminals, manufactories and business houses through freight subways placed in the subterranean street. Also the health and comfort of the people require that the waste from houses and much of the débris from building operations be removed without being carried over the street surface; freight tunnels constructed in the subterranean street may be utilized for both the above purposes. Such tunnels have been constructed in Chicago and placed at such a depth below the surface of the street as not to interfere with other sub-surface structures; they connect with the sub-basements of the large business establishments, railroad terminals, post offices and manufacturing establishments, and much good has been accomplished and relief given to the surface of the street, but unfortunately the size of the tunnels in Chicago is too small to permit of the shipment of freight in bulk; hence the improvement has not been profitable, but it has demonstrated that tunnels of sufficient capacity to carry freight without breaking the package can be successfully operated and that they will result in the economical handling of freight and the giving of great relief to the congestion on the street surface.

In order to obtain the maximum utilization of streets in which passenger subways are constructed, it has been suggested that subterranean sidewalks be built connecting the various subway station platforms in such a manner as to make a continuous sidewalk on both sides of the railway tracks and adjacent to the buildings on either side of the street. Fronting on these sidewalks, stores may be opened in the basement of buildings and bulk windows constructed. Such improvements do not appear to be desirable, as they would further increase the number of people daily using the street and would encourage the transaction of business under the surface where ventilation would be poor and unhealthy conditions liable to obtain. The welfare of the people can be much better served by providing other localities for commerce and trade on the surface of the streets and thus extend and make available a much larger area for business activity.

It is highly desirable that all ugly and objectionable traffic and service should be put under the street and that it shall be done in such a way that the fewest possible number of people will be required to conduct it, and it is in the interest of the conservation of the public

health to put nothing under the street which attracts or requires a large number of people to pass any considerable time there.

People interested in city planning have suggested that in the rebuilding of the congested parts of a city the two-story street be adopted, so designed that all pedestrian travel and light traffic would be upon the surface and all freight transportation in the street beneath,—the surface street to be constructed like a bridge roadway and never interfered with except for the proper upkeep and repairs, and in the subterranean street beneath provisions to be made for freight transportation and the whole system of pipes and conduits required to supply the public with the necessities and conveniences of modern urban life.

When one first reads Eugene Hénard's description of "The Cities of the Future," he feels that Mr. Hénard has drawn largely upon his imagination, but upon careful study of the conditions which now exist on the surface and in the subterranean streets and the requirements that will be placed upon these streets in the future by the continued concentration of people in the business centers of our cities, it will be realized that his ideals are not greatly overdrawn.

If healthy conditions are to be maintained and the comfort and convenience of the citizens conserved, it will be necessary to provide for carrying many more of those services which are essential to the comforts of life, in the subterranean streets. The advent of the electrically operated vacuum cleaner, now coming into general use, may result in the placing of conduits in the streets to carry this waste to a central disposal plant. The garbage and ashes from the homes of the people may be removed in a sanitary manner through subterranean channels and the garbage cart and ash wagon may disappear from the surface of our streets. The use of pneumatic tubes, steam heating and refrigerating pipes will be multiplied, and to provide for these added services as careful planning will be required for the subterranean street system as is now given to the surface street system; and every town planner in preparing plans for laying out new main thoroughfares and the development of street intersections must consider the requirements of the subterranean street and include it in his studies as an essential part of the city plan.

CITY PLANNING AND THE PROBLEM OF RECREATION

BY JOHN COLLIER,

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In providing for recreation, if recreation be rightly understood, city planning reaches its apex. So broad a statement needs explanation.

Two ideals have mainly dominated city planning in the last hundred years. The first was the ideal of civic splendor which, in America, became the city beautiful idea. The second ideal was business facility.

America has, indeed, passed beyond these limits, if the campaign against congestion, and policies involving the social use of taxation, be regarded as methods of city planning. But in general, our thought has been pretty constantly focussed on civic splendor, business facility, and the adjustment of city life to what may be called the organic needs including the physical health of the people.

But so far we have not planned cities from the viewpoint of social organization. In social organization are comprehended the psychic and esthetic interests and leisure-time avocations of the people. The dynamic agencies of society must be sought in the psychic, aesthetic and leisure-life interests, and these interests depend on a proper physical basis, just as much as do the business and health interests of a city.

City planning for recreation means the provision of a proper physical basis for social organization.

The word "recreation" is a misnomer and does not adequately convey the meaning which has been put into it by modern usage. Recreation, in an economically modern society, means substantially life itself.

Before the age of machinery, production was carried out on the small-unit basis. Social relations were identical with work relations. The father-son relation was the rule of trade. A single worker, an artisan, controlled many or all of the processes represented in the finished product. He often marketed his own product. Under these

conditions, work was life-enhancing and more vital than anything else. Recreation could justly be viewed as a means of recuperation for work.

The introduction of machinery has caused profound changes in the nature of work, in the meaning of work both to mind and body, and in the social organization of work. Large-unit production has replaced the small unit. Minute specialized movements have taken the place of the large-muscle movements and self-expression of manual work. The worker has necessarily lost all sentiment of identity between himself and his product. Industrial cities have grown like mushrooms, while the population centers have grown to be more nondescript; and while the units of production have been growing larger, work in its meaning to the individual has grown smaller.

In brief, work has become, through the direct or indirect influence of machinery, a greatly reduced part of life, when we view life subjectively.

The change in leisure has been almost as great as the change in work. The old leisure institutions have either passed away, or have shrunken to a point where they no longer have a controlling influence in life. Commercialized amusement has grown to a volume utterly unknown in past generations. Commercialized amusement generally means specialized amusement and amusement which appeals to one sex or age group, not to neighborhoods or to family groups. Commercialized amusement, moreover, has very often an ulterior motive; the saloon has a political motive, for example, the dance hall has often a sinister motive of corruption. The total quantity of leisure has vastly increased and there has proceeded a corresponding reduction both in the variety and the attractiveness of the social institutions through which leisure life has expressed itself during many ages.

It has been said that leisure time is a void to be filled. Such a figure of speech is quite inadequate. It would be more truthful to say that the vital interests of mankind, with all their possibilities and perils, have been forced out of work into leisure, where they continue to operate with all their primal vigor, but without the facilities for expression or the traditions of behavior which are necessary to insure healthful results.

The recreation problem here merely hinted at has been proved to be measurably responsible for many oppressive ills. Among these ills are the increase of juvenile delinquency, the deterioration of

working girls, the saloon influence in politics, and the vast blackmail which depends on our unscientific repressive laws; the loss of control by the educational system over its pupils before they are sixteen years old, the disappearance of neighborhood life in many cities, and, finally, the breaking up of the family group. For the family, deprived of its opportunity to work together, is now forbidden to play together.

City planning must absolutely precede the solution of the problem of recreation.

At present, it can be broadly stated, regarding America:

That no city has enough play area, so distributed that the majority of its people can use the facilities.

That in all cities, political and civic discussion must be enjoyed mainly in private premises or in premises connected with saloons or controlled by persons who do not favor free discussion.

That organized social life, in all cities, must be carried out in premises subject to the same criticism that holds good of political meeting places.

That women, especially, are without provision, either public or private, for their leisure time or leisure interests.

That there are almost no places in American cities where family groups, as groups, are permitted or invited to come in such wise that the leisure life of the members will be a family life.

That 95 per cent of our children have no play spaces except the streets where they violate ordinances and statutes through the mere act of playing, where they are a real annoyance to the public and where their own life and limb are in danger. Recent investigations by the People's Institute, based on previous investigations by the Sage Foundation, prove that 70 per cent at least of all male juvenile crime in New York City is directly due to street play or to the effort to play in forbidden places.

Finally, it must be said that public property, worth several billions of dollars, is going to waste. School properties lie idle during the long summer season and are in use only for about six hours per day when used. The waste through nonuse of playgrounds, school buildings, armories, etc., involves a sacrifice of tax-payers' money amounting to probably a hundred million dollars a year. An intelligent development of these properties would modify enormously, and healthfully, the social environment of all cities without exception.

The City-Planning Program

City planning for recreation means only in slight measure the acquisition of new kinds of properties. It is the existing properties which must be differently planned and differently grouped.

a. Schools. American wastefulness and modern specialization find few better illustrations (or worse) than in the way our public school properties are built and used. The public investment in school properties is enormous. In New York City, the school investment has been \$100,000,000 in the thirteen years since 1900. In that same city, where school buildings are used in a relatively intensive way, the recent school inquiry developed the fact that the plant lies idle more than 40 per cent of the available working time. The percentage would be materially larger if the country were taken as a whole.

But the above statement of 40 per cent non-use only partially conveys the facts. It relates to the buildings as they exist, placed as they are in relation to the other physical elements of the city. Most of the schools are without open court yards or auditoriums. Their roofs are generally unavailable for open-air recreational purposes. The school buildings are usually not adjacent to open areas; there is rarely any correlation between the location of schools and of playgrounds. There is no physical correlation between schools, playgrounds, public libraries and baths. If the New York school buildings, in correlation with the other educational and recreative features of public provision, could be replanned with a view to the maximum of varied and integrated use, the human value of the school building would be multiplied several fold. In other words, to criticize the New York school buildings in terms of modern theories of education and recreation would involve a statement, not that they were unused for forty per cent of their available time, but that 70 or 80 per cent of their possible usefulness was being sacrificed.

To translate this statement, which applies to every American city with a few partial exceptions, into terms of a practical program, one would say:

1. Schools should be united or associated with open play spaces, indoor recreation houses and libraries.
2. Where the city has already been built, but where schools, playgrounds or libraries are still needed in congested districts, these properties should, whenever possible, be planted alongside some

companion facility, in such a way that they can supplement one another.

3. Buildings should be planned, or wherever possible, remodelled, in such a way as to provide meeting rooms, assembly halls, dance floors, spaces for indoor team games and, in general, those facilities which the people now purchase dearly from commerce, or get in a scattered way through insufficient public provision.

With the above physical propositions in mind, we can undertake a statement of the reasons why the physical correlation of educational and leisure-time institutions is not merely a measure of economy but is a social necessity.

The average age at which children leave school is not over fifteen years. Most of the socially useful qualities of adult life will be made or marred by the child's experience between fourteen years and twenty. The social nature, even in its biological aspect, is quite largely a growth of the adolescent period.

The school gives up the child. Just at this time, the family also gives up the child. Family influence cannot pursue the adolescent into the shop where he works, into the street or isolated playground, or into the commercial resorts where he must get most of his amusement.

One can hardly overstate the cost to society of this condition. It is a mad waste of social resources and of educational influence. It is a silent menace to our country. This condition cannot be met through any plan of going backward. Neither the family, as it formerly lived within the walls of the home, nor the church as a separationist agency, nor the influence of unconscious community tradition, can be revived in their old forms. They are disappearing institutions. On the contrary, church and family must be brought out into the market-place and the social center. We may hope for no solution for this problem short of the creation of a leisure-time environment, frequented by family and social groups, where new community interests and civic enthusiasms may be engendered to take the place of shattered community tradition and waning ecclesiastical inspiration.

It is of the utmost importance, and it is important in framing a city-planning program, to understand the impossibility of compensating, through specialized institutions of any kind, for the neighborhood, the institutional and family influences which held life together in the past. Public libraries as such, public baths as such, park prome-

nades as such, vocational bureaus as such—all of these things are convenient to the individual but are not socially constructive. They touch life so lightly or so specifically that they cannot influence the standards or habits of the people at large. The habit-forming influences in American communities are at this time much more largely of the nature of commercialized amusement, competitive business and predatory political organization, and they do not form such habits as a progressive society needs.

At present our parks and playgrounds, our libraries, our lecture centers are all specialized and separationist institutions. They separate the members of the family, they separate the individual from his group, they separate age groups from one another, they provide isolated oases in the lives of a minority of individuals, and it can hardly be said that the civic interest functions through any of them. On the contrary, the social center, being primarily a neighborhood institution, with elements of self government and self support, combines the social, the utilitarian, and the civic elements of leisure life. Better one social center than a score of specialized facilities.

If this vision of the meaning of leisure time and its peculiar needs be once clearly grasped, almost anybody can formulate a city plan with reference to recreation.

b. Parks. No country has the extensive park systems of America. Most of our park systems have been planned according to the higher esthetic ideals, in fact, according to aristocratic ideals. We have taken it for granted that any remodeling of park systems to accord with modern and human needs involves a necessary sacrifice of the esthetic elements of the park.

That this assumption is erroneous can be seen by any one who visits any of a dozen Chicago small parks, like some of the Chicago West parks, which have been developed exclusively for social and play purposes yet whose architecture is beautiful, and whose landscape work is classic. Chicago affords another suggestive illustration in its Lincoln Park, where the play area supplements the promenade area, and where the promenade area is insured against vandalism through the very fact of nearby opportunities for organized play.

In planning parks, almost as much as in planning schools, it is important to remember the facts of neighborhood life, of family life, and of the tendency of human beings to play in groups. The playground need not be merely a place for supervised play by children

during the daylight hours. It will be a much more wholesome children's playground if it be likewise a community social center, used in the evenings as well as by day. The playground can be an excellent musical center in the evenings. It can provide for open-air dancing; for open-air moving pictures. An arena with provision for spectators is always desirable, for this will make possible team games, pageants, and other neighborhood events. The limitation of space must always be borne in mind. For instance, where one municipal golf link may now occupy forty acres, there could be placed a hundred tennis courts, archery courts, croquet parks, or similar facilities for games which enlist large numbers of people in team play and team competition.

It is now generally recognized that it is better to have many small parks than an equal area of a large park out of reach of most of the people.

A careful study of the possibilities of minute playspots will always repay the effort. These spots may be no more than 50 feet by 50 feet, and yet may make a life's difference to the child.

c. Other Facilities. All that has been said about schools and playgrounds holds good for libraries, municipal buildings, and armories. The armories represent the climax of wastefulness. They are idle four-fifths of the time, although offering great expanse of both floor and roof, and being paid for, built and maintained by a public which does not believe in war.

Supplementary Policies

The maximum development of the public properties and the physical integration of the facilities will still not provide for the whole leisure life of most of the people. There remain some promising lines of amelioration even in the most congested regions of the great cities. If it is proper to restrict or forbid traffic on resident streets, as is done in many cities, it is certainly proper to close off blocks in tenement districts and convert them into playgrounds, either continuously or during certain hours. Neither on such play streets, nor on regular playgrounds, is it necessary to have costly apparatus. There are many indications that a large part of all desirable juvenile play requires no apparatus, or little apparatus; that most children are inclined to run away from specialized apparatus, and from too much

supervision. It is known from extensive street surveys that at least one hundred educational games are carried on by the children of our great cities without supervision of any kind, and are transmitted from generation to generation of young people in ways little known to the grown-ups. All that is needed to build out of the spontaneous play life of any city an organized and systematic educational play life, is that physical space be provided and that status be given to those who excel in desirable games. This means the promotion, by the city or by play unions, of competitions and systems of honor like the systems which are practiced by the boy scouts, the camp fire girls, and which are modifying the outlook on civilization of millions of boys and girls.

A more controversial suggestion would be, that it is perfectly proper to require owners of tenements to develop their roofs as play grounds, and that it is perfectly proper for the community to regulate and supervise such places.

Conclusion

Finally, were all these policies realized, we should still not be able wholly to redeem the leisure environment in congested districts, any more than we can hope to redeem the physical environment in these districts. City planning for leisure depends for its further reaches of possibility on those other departments of city planning which aim at the annihilation of the modern city as it has become known to us through the human ravages which it works. Fundamental modifications of taxation, a domination by the community over transit in all forms, and similar basic policies, lie underneath whatever is said above.

But let it be remembered, that the carrying out of all these fundamental policies, unless coupled with the true social art of city planning for leisure, might leave us a nation of Philistines living in cities of a prosperous and healthy Philistia.

PLANNING FOR DISTRIBUTION OF INDUSTRIES

By E. H. BENNETT,
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Some interesting and instructive articles written by Mr. Graham Taylor, Jr., and published in *The Survey* under the title of "Satellite Cities," cover in a very clear way the conditions which exist in the purely industrial communities which have grown up adjacent to but distinct from the large cities. These articles lay bare the mistakes and faults in street planning, real estate control, housing and social and political development in these communities. They touch on but do not discuss the industrial areas which lie inside of and are a part of the life of the city itself. Neither do they discuss what are purely large industrial communities such as the manufacturing towns of New Jersey and Massachusetts. Little could be added to this study of "Satellite Cities" made by Mr. Taylor.

It is not the purpose of this paper, however, to treat of "Satellite Cities." Our purpose is rather to discuss and determine the forces and tendencies which are at work within the city itself, and which control its industrial development and to try and find, if possible, some way of directing and adjusting these forces and tendencies in such a way that the whole city may develop in the best possible manner.

To take an absolutely unoccupied stretch of country and lay out upon it an industrial area and fit to this industrial area the proper street system, the proper transportation lines and the proper laws of housing, is a matter of comparative physical ease. The real problems which arise in such a case depend for their solution on the ethical and moral sense of the individual or corporation responsible for the development, rather than upon the ingenuity of the architect or engineer who makes the design. Upon the individual or corporation lies the burden of carrying out the design; on him rests the control of the nature of the dwellings which shall be erected, of the political and social organization which shall be developed; his is the responsibility for the actual carrying out of the improvements suggested for transportation and for streets. He has an absolutely free hand in a virgin field in which to work and his falling short is due to his carelessness, to his lack of ethical sense, or to his greed.

In a city, however, the problem is different. The situation is complex. In the place of individual control and responsibility there are community control and community responsibility. Certain fixed elements appear which cannot be removed. All the economic forces which sway industrial development are at work uncontrolled and undirected. These economic forces ignore and set aside consideration of their effect on the living conditions of the workers—of their effect on localities. They bring about industrial development indiscriminately all over the city, paying no attention to the fact that this may change completely the character of a whole neighborhood.

Could these forces be controlled or even directed, an orderly development might be arrived at which would result in benefit to the living conditions of the whole city. There would be an organic whole functioning properly in all its parts. It would be possible to plan improvements for the future for any section of the city and be certain that these improvements would be the proper ones when the time came to carry them out. It would give more stability to land values and would enable assessments for general improvements to be laid with closer relation to the benefits derived than is possible at present.

In planning for industrial areas inside the cities themselves, therefore, what we are most concerned with are the forces which are behind industrial development. The ends to be attained are, of course, to be firmly fixed in our minds. These may be said to be: (a) The developing to a maximum of the industrial potentialities of a city; (b) the provision of proper working and living conditions for the workers; and (c) the proper safeguarding and developing of the city as a whole.

Generally speaking, the utility of land in the city falls into three classes: business utility, industrial utility and residential utility. The areas devoted to these purposes are separated by more or less definite lines and are themselves subdivided according to the specific nature or class of use for each purpose. Business area for instance lies generally at the focus of local transportation routes or in other words at the point of intersection of the strongest lines of local travel. This point is very often at the geographical center of the city which can be reached from all sections of the city with equal facility. The industrial area on the other hand has no one definite location, as has the business area. Depending largely on railroad facilities, it soon becomes scattered throughout all sections of the city forcing its way

from all directions in wedges almost to the business heart. There is generally no control and no concentration other than that offered by the railroad lines. To residential purposes is devoted the rest of the land in the city. This is generally of three classes: fine residential area; general residential area; and tenement area. The first of these preempts those sections of the city which have the greatest number of pleasing and natural advantages. The second, in general, lies along the thoroughfares and highways which have the best transportation facilities and also along such railroads as provide suburban transportation. The third class, the tenement areas, are generally found in the industrial regions and in the pockets or areas that lie between railroad lines and close to the center.

The forces which govern industrial development in the larger city may be classed as follows: (1) Railroad shipping facilities; (2) price of land; (3) labor market; (4) transportation for workers; (5) nature of industry; (6) power; and (7) origin of raw material.

It is the general tendency of industry to seek the points to which they can most easily bring their raw material, and from which they can ship most easily their finished product. The larger the industry the more important that it should have access to all the different shipping facilities in the city—water and rail. Inasmuch as the railroads are known elements in our problem, their location and right of way being fixed and more or less unalterable, we can safely say that in the area in which are concentrated the majority of the railroad lines entering the city and the waterways, if any, that is at the focus of transportation, the great industrial development will take place, and adjacent to that focus the majority of industries will concentrate. If a city, however, is well supplied with belt lines, these belt lines will serve to spread out and elongate this area. They create practically an "elongated" focus for they touch every railroad which enters the community. In a city with belt lines, therefore, we may expect our industrial development to send off from the area of concentration long arms along these belt lines. The increasing price of real estate in the larger cities is a centrifugal force driving industries to the outskirts of the city where land is cheaper. The presence of the belt line spreads this area over a large territory, bringing into the market large areas and keeping the general level of prices low.

The next two forces which affect industrial development are closely related. While industry demands a flexible labor market, workmen

should have the benefit of as constant a demand for labor as possible. It is necessary, therefore, for a workman to live in a locality from which he can reach more than one center of industry. To have an industrial development with the workmen's houses clustering around it creates serious difficulties, unless liberal transportation facilities connect this one industrial region with others and with the center of the city, nor does this act only one way. If there are not such liberal transportation facilities, the workman is dependent on this one industry for livelihood. When a shut-down occurs in the factory or the working force is reduced, a great many of these workmen are left without means of livelihood and without a chance to go to other places where such means can be had. On the other hand, if liberal transportation facilities are provided, these facilities will be patronized during such periods when there is shortage of work in one locality or another, and the workmen desire to go to other centers. If, however, the industries are running at their full capacity, then these transportation lines are without patrons and consequently suffer.

There is a general tendency, which amounts almost to a law of industrial development for industries of a similar nature to group themselves in the same locality. We find the majority of the steel and steel products industries together, of the lumber and wood working trades together. So also is it with the garment factories and the chemical manufacturers—in fact with almost any well defined class of manufacture.

There are evidences appearing, although not yet clearly defined except in a few special manufacturers, which lead us to the belief that there is also a tendency of manufacturing interests to seek the section of the city which is within easiest reach of the source of their raw materials. This is natural and easily understood for the reason that the time consumed in taking freight through and around large commercial centers is becoming greater every year, and industry cannot afford this time waiting for this raw material upon which it depends. The material must be brought to it quickly and with minimum delay. So also is it with the finished product. Transportation facilities for distribution must be provided reasonably quickly, as much of the modern commercial superiority depends upon service.

In nearly all of the cities belt lines are becoming lined with industrial development, so also is the area in which lies the majority of the railroads. The effect of this industrial development is patent in

any city. It fixes definitely the city's structure and scatters manufacturing establishments wherever there is a railroad line. That the individual under existing laws has the right to use his property as he sees fit, no one can deny. The problem, therefore, of the location of industries comes down to one of community control. Until the community can be brought to see the benefits which arise from controlling the forces which direct the location of industries, it is hopeless and impossible to attempt any planning of industrial areas. For their guidance in arriving at such control the following principles may be enunciated:

1. That the industries must be concentrated in an area where there is possible the greatest amount of railroad service.
2. That the existing residential areas must be protected and industries prohibited from locating where they will spoil them.
3. That there must be adequate flexible labor market.

It is impossible, in discussing the relation of workers to industrial development, to ignore the factor that it is necessary for families to be within reach of various lines of work, both inside and in the out-lying sections of the city. All members of the household units do not work in the same plant, and some even work in the business section of the city itself. To remove the family as a whole to the outskirts—to the country—would, unless adequate transportation facilities existed which allowed of diversity of occupation, reduce all its members to one dead level of uniformity, or instead would break up its unity. It is useless, therefore, for us even to discuss the probability of opening up new areas for housing workers, unless we can provide them varied employment or many transportation facilities to other sections. This is one of the reasons for keeping intact existing residential areas and for concentrating industrial occupation of land.

So far we have determined what are the forces which control industrial development, and which must be directed in taking care of and in planning for industrial development. There remains to consider the general city good and the forces which demand such recognition in the plan of the city. It is impossible to ignore the general welfare and the general needs. This connection between the general city plan and industrial development lies, as has been shown above, in the distribution of the workers, in the provision for transportation and in the preservation of residential areas in the city. That the living conditions of industrial workers in the cities must be alleviated

no one can deny. Individual efficiency can be raised only by doing so. And it is the duty of the community to assume the responsibility.

We come, therefore, to these conclusions that the area for the housing of working people must be in a district from which can be reached both the city and several sections of the industrial area itself. It must be free from industry. It must be healthful, well-built and be provided with proper recreational activities.

Following along the lines discussed above, we should devote to industrial purposes the area in which lies the focus of the railroads. We should relate this area properly to such water connections as exist. This district lies in most cities at the circumference and generally there is one area which has more than another of the requirements to be met. If there were no focus we ought to create one by the construction of a belt line and locate our district where it would be least harmful to the city as a whole.

The residential areas should lie between this industrial district and the center of the city, serving also the demand for workers in the business areas. They should be connected adequately with both of these districts by transportation lines.

In this paper it has been possible only to outline the method of study and some of the larger elements of the problem. The conditions in each city vary so much that only in the main features will they agree. The only factors which we find existing in all cities are the forces—economic and social.

To solve properly the problem there is need of coöperation from all the individuals interested, from the business men, the industrial corporations, the railroad and shipping interests, the social workers and city government. To this end the following recommendations are made:

1. That a responsible body of representatives of commerce, transportation, railroad interests, social workers and city government be brought together to study thoroughly the tendencies in each particular city and to formulate legislation for zoning the city.

2. That power be obtained by each city from the legislature of the state which will enable it to control the development which may take place within its borders and for a certain distance outside of its borders. The city must have control of the area which at some future day it may annex.

THE WATER FRONT AND THE CITY PLAN

BY CALVIN TOMKINS,
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Cities with navigable water frontage possess natural advantages over those served by railroads only. Before the days of the railroad the importance of water routes was better understood than now. As a consequence the railroads at most cities have attempted with varying degrees of success to dominate the water front for the following reasons: (1) To limit competition by water carriers; (2) to control competitive railroad business by controlling the best terminals and to block rivals by keeping them from using natural opportunities, and (3) to extend their operations over joint water and rail routes—ocean, river and canal.

The eagerness of the railroads to secure the utmost volume of business has resulted in the atrophy of most of the important river and canal routes in the country and it follows that the railroads are overburdened with unprofitable coarse freights. This monopoly of the water front by the land carriers—the unwillingness of the railroads to pro rate with water carriers not under their immediate control and the intentionally destructive and wasteful competition of the railroads with parallel water routes—are the principal causes for the neglect of our waterways and public terminals. The cities themselves can remedy the situation in part by developing public terminals for marine use. The questions of pro rating and parallel competition must be left to the supervision of the Interstate Commerce Commission and the public service commissions of the states.

Obstructive railroad occupancy is after all the consequence not so much of the grasping policy of the railroads as of the protracted neglect of the cities to provide public terminals, and to fit the railroad terminals into public organization plans.

Cheap freight rates to and from cities, the economical terminal handling of food, fuel, raw materials and finished products at cities and the substitution of cheap transfers between the railroads, the several terminals of a port, its factories and warehouses, are the ends sought everywhere.

At smaller ports the dependence of city growth upon terminal

facilities is beginning to be appreciated and acted upon. But at the larger ports, and notably at New York, the largest seaport of the world, there is no popular understanding of this fact and the city's needs for schools, sanitation, water supply, pavements, police, etc., force the underlying cause of growth into the background. Not until the rate of city growth diminishes or the results of disorderly planning become too apparent to be longer neglected will officials be freed from the pressure of corporate interests.

The difficulties of port organization at New York have been increased by the dissipation of the dock fund for local city conveniences at a time when it was most urgently needed for port improvements. The greatest danger which now threatens our national port is the lack of funds. This will be advanced as a reason for permitting still further railroad control over its terminals as the quickest and most convenient way to secure necessary betterments. Indeed recent changes in the state law were procured by the city avowedly to facilitate this very purpose.

New York is the most sought for port of the world and is fortunate above others in the fact that its principal terminals can be made self-sustaining, and consequently can be publicly financed without dependence upon the railroads or upon promoting bankers—provided the city has the will and enterprise to act. So potent, however, is the paralyzing effect of popular ignorance upon official action, that, contrary to the practice of the other ports of the world, New York alone is rapidly being committed to a policy of private exploitation and its last unpledged productive asset—the terminals of the port—are soon likely to pass under private control as have already its profitable subway, gas and electrical utilities.

I have gone out of my way to direct attention to the dangers that menace the organization of the port of New York since not only is it the great national port serving the entire country, but conditions here are typical on a large scale of the difficulties encountered at the smaller ports. New York is destined to be the battle ground between public port authority and the designs of the continental trunk line railroads to control other competing lines, the Erie Canal trade, the coastwise trade and finally the over-sea trade through preferential transfers to favored sea ships. This they hope to accomplish by substituting private for public control at the principal transfer terminals of the port.

For more than ten years American cities have been evading the real issue of comprehensive planning by diverting attention to the "City Beautiful." It is only recently that the inter-dependent relations of beauty and utility have begun to be rightly understood. City plans should be based upon fundamental community needs for transportation of goods, power and passengers. This includes the proper correlation of terminals, warehouses, factories, markets, streets, parks, water, gas and electrical services all to be publicly controlled and coöordinated, the ultimate intention being gradually to fuse all these separate parts into one inclusive publicly controlled system, adapted to communal living purposes and administered either by corporate agents of the cities or by the cities themselves as experience shall determine. No general rule as to what can be publicly undertaken at any particular time can be laid down since some communities can undertake what others would fail to carry through successfully. The practicability of direct public administration is not based on any social theory, but on the actual experiences of time, place, trials, failures and successes. Great cities have been made possible by modern transportation and cold storage agencies. These regularly supply them with food, fuel and raw materials either for consumption or for conversion into finished products through the activities of dense local populations industrially organized for efficient production. If transportation to and from the cities, or if terminal distributing within them breaks down, the efficiency of city organization is correspondingly diminished. In short, municipal efficiency is directly proportioned to the efficiency of transportation of goods, power and passengers.

The basic principle of port organization is that a port should be developed as a unit, under public dictation of the terms on which private carriers, shippers and consignees shall be served. The port being once conceived as an organic whole, administered by the city for the benefit of all, there can be no thought of remaining in or returning to the chaos of jarring private rivalry and mutual obstruction from which we suffer; or of final dependence on the makeshift policy of separate sub-ports constructed by great private corporations —no matter how perfect each may be in itself or how welcome they may be as coöoperators in a city system.

While octroi taxes on city food are not sanctioned in this country, nevertheless many municipalities, and notably New York,

permit its equivalent to be exacted through the instrumentality of badly organized market terminals under railroad monopoly. These invoke wasteful distribution and facilitate conspiracies among middlemen. The railroads do not profit by this but are attracting to themselves a popular animosity which prudence should prompt them to avoid, since it is now no light matter to be held accountable for any part of the increased cost of living.

The use of the motor truck for distributing and collecting purposes depends upon quick despatch at terminals, and the growing importance of this new transportation factor cannot be exaggerated, but its substitution for horse traction will proceed slowly so long as exasperating delays at terminals continue.

A port at which the several parts are properly related to each other will enjoy the advantages of industrial as well as commercial opportunity. The establishment of factories rather than the passage and transshipment of commodities through a port builds up the city. Factory development necessarily follows in the track of cheap transportation and good terminal distribution. Inter-communication between the factories at a port, its docks and all its transportation lines, is becoming essential for successful city competition in industry.

Only a few Atlantic ports can expect to compete even in a small way with the ocean ferry service between New York and every port of the world. But other coast ports as well as the interior cities should try to secure the best rail, canal and coastwise communications with New York in order to obtain for their industries the advantages of this unrivaled, regular, over-sea service.

The exceptional opportunities for manufacturing afforded by the seaports of the country will tend to deflect industry from interior cities to the coast. The phenomenal growth of the world's newest and consequently best organized seaport, Manchester, affords the best example of the advantages of intelligent port planning.

Since New York's growth will continue to be more rapid than its capacity, to organize its growth publicly, it will be advantageous even to New York itself if manufacturing enterprise should be diverted elsewhere. Growth will then be slower and more orderly at the great city. A big city badly organized is a bad city, and the problem of organization continually becomes more difficult and complicated as cities increase in size.

The basic relation of terminals to successful municipal progress thus becomes apparent. Cities exist mainly because they afford cheap and convenient meeting places for people and commodities, and because a centralized population, well served by a highly organized system of public utilities, can convert raw materials into finished products more advantageously than elsewhere. An intelligent popular comprehension of the underlying relations of port organization to city development is necessary to hold officials to their public responsibilities and to counteract the private corporate pressure they are constantly subjected to.

Cities that are fortunate in also being ports should base their city plans upon the port opportunity. Mistakes which exist at most of the older port cities should gradually be rectified and new improvements undertaken with reference to preconceived design. Private terminal improvements should be encouraged when in accord with a general plan, and subjected to such public regulation as may be necessary to fit them into a public system of administration.

Experience is demonstrating that a large city that is also an important seaport cannot successfully mingle its city and port administrations. The truth of this is manifest at New York, where national and port interests have been sacrificed as a consequence of diverting dock funds to city uses.

A small city on the contrary will be prompted by intelligent self-interest to plan and finance port improvements in order to stimulate its growth. I believe that even at the smaller cities a separate port organization exercised through the instrumentality of local commissions will be found desirable. In every instance the finances of the port and the city should be kept separate. Unless this separation of administration and funds shall be provided, popular insistence upon expenditures for city conveniences will almost invariably starve port improvements, since the need for local conveniences appeals much more strongly to the populace than do the indirect advantages of port organization.

The fundamental difficulty of city organization in America is the selfish exploiting interest which a large part of our most experienced and influential citizens have, or imagine they have in their cities. Is the paradoxical query—are our best citizens our worst citizens—either impertinent or inopportune? The experience of New York, at least, affords evidence that the question is in order. No-

where are transit, terminal, gas and electric prizes so alluring and since the Interstate Commerce Commission has restrained the exploitation of railroad stockholders, the attention of speculative promoters has naturally turned to the exploitation of the communal rights and privileges of the cities. New York has fallen an easy prey to such machinations and her present plight should serve as a warning to other cities.

A CITY PLAN FOR WASTE DISPOSAL

BY GEORGE A. SOPER,

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If by plan is meant a detailed program, the reading of this paper will prove disappointing. It is not possible to make a city plan for waste disposal without knowing the city to which it is to be applied. Many things which can and should be done in disposing of the wastes of a large city are quite impossible in a small one, and methods which are suitable for a country village cannot be thought of for a city of even moderate size. This applies equally to the methods of collection and disposal. The composition of the wastes differs essentially, and geographical, climatic and the social characteristics of the population have all a material effect upon the problem.

There are, however, some underlying principles which should be observed in all work of this kind and if by plan is meant a statement of the more important principles concerned in the collection and disposal of a city's wastes, some help may be obtained by reading this paper.

Definitions. By city wastes is usually meant those broken, used and discarded materials which are customarily removed from the houses and streets of cities at public expense. In small towns and in some villages the work of removal is done at the cost of the householders and even in large cities some private scavenging is usually carried on.

The term wastes strictly includes sewage as well as solid refuse, but it is seldom so employed. Nor is snow generally spoken of as a part of the city's wastes, although it is a waste in the strictest sense and may be a very costly one to remove. Dead animals, termed offal, although generally removed at public expense, are seldom included in the term waste. The refuse produced by stables is customarily removed at private cost. Sometimes trade wastes are disposed of at private and sometimes at public expense. Neither the refuse of stables nor of manufacturing establishments is customarily referred to as city wastes.

In the usual acceptance of the term, city wastes comprise street sweepings, kitchen refuse, ashes and rejected papers, fragments of cloth, and metals and wood from dwelling and business houses.

Value in Wastes. Some value exists in practically all forms of municipal wastes, but in most cases this value is not great enough to warrant the pains which it is necessary to take to save the useful materials at the household. Furthermore, such matters are valuable only when in considerable quantity. Only when the salable ingredients are gathered together in large amount can they be disposed of to commercial advantage. Because of the value which lies in certain kinds of waste materials, when in quantity, it is customary more or less thoroughly to sort out the mixed wastes after they are collected with the object of extracting those materials which can be sold. This sorting is usually imperfectly done and unsanitary practices are common in connection with it.

Examples of the waste materials which it generally pays to separate and dispose of by sale are bottles, metals and rags. Frequently there is enough grease in the kitchen waste of restaurants, hotels and private houses to pay for collecting and rendering it. In some cases, private scavengers collect such material without charge, finding their compensation in the material itself. More often, especially in small places, kitchen refuse is kept apart from other wastes at the household and is disposed of by feeding to poultry or hogs. This process is not objectionable when carried on with reasonable regard to the sanitary requirements.

Cleanliness is Costly. Speaking generally, it is an expensive undertaking to dispose of city wastes in accordance with the best sanitary principles. It costs money to keep a city clean. It rarely happens that municipal wastes can be rendered inoffensive and innocuous without considerable expense. In some instances cities have been able, by conducting their scavenging departments upon modern business principles, to recover a part of the cost of disposal, but such instances are rare. Successful work of this kind is usually confined to cities of 100,000 inhabitants or more. These alone can afford to pay the salaries necessary in order to obtain the services of the best administrative officers and maintain such a plant and force as are required for thoroughly efficient work.

By far the most difficult municipality to deal with satisfactorily from the scavenger's standpoint is the town of from 10,000 to 50,000

inhabitants. The methods employed for the disposal of the wastes of places of this size are frequently unsanitary and unsatisfactory in the strongest sense of those terms.

Need of Coöperation. A great deal of the difficulty which lies in the way of keeping a city clean lies in the attitude which the average citizen takes with regard to the wastes. It is taken as a matter of course that the wastes should be promptly disposed of, but there are few persons who care to assist in the disposal. Old papers, fruit skins, ashes, garbage and the dead bodies of domestic animals are thrown in the streets, or, what amounts to the same thing, put out in improper receptacles, on the assumption that somebody, whose duty it is to maintain municipal cleanliness and order, will remove them. This burden is carelessly imposed by thousands upon a few. To dispose of a city's wastes is an arduous undertaking and every citizen who values cleanliness and order in public places should desire to make the work as light as possible. In fact, no city plan for waste disposal can be satisfactory which does not provide that those who produce the wastes shall coöperate in facilitating their removal. Ordinances should be passed prohibiting the littering of streets, providing for the placing of wastes in proper receptacles and the location of receptacles in suitable positions.

Nor will it be sufficient to make rules and regulations without arranging for their enforcement. The magistrates whose duty it is to hear complaints and violations of the municipal regulations should be required to do their duty in helping the city scavengers to keep the city clean.

Continuous vs. Occasional Cleanliness. A principle which should be remembered in making a plan for waste disposal is that it is better to keep a clean city clean than to clean a dirty city at intervals. To maintain a condition of cleanliness is more expensive than to maintain a condition of dirtiness, but it is nevertheless the ideal toward which it is desirable to strive. The city which has a cleaning-up day once a year, once a month or once a week, as the case may be, is usually a dirty city. The periods of cleanliness are brief and serve only to give a glimpse of a state which should be continuous.

It is more important for a city to be clean than is commonly realized. Dirty highways encourage dirty households and dirty households, dirty persons. This relation is very close. It is most apparent in those parts of cities in which the dwellings are crowded

and the population dense. Here many mercantile and domestic functions ordinarily performed within doors are carried on in the streets. It is of the greatest importance that those parts of a city which are most likely to become dirtiest should be kept cleanest. Nothing less than scrupulous cleanliness should be considered satisfactory in the poorest parts of cities. The fact that the streets of a crowded tenement district may be very dirty without attracting notice has nothing to do with the matter.

Disease and Dirt. It is well to remember that wastes sometimes, but not always, are dangerous from the standpoint of disease. No form of infectious illness is produced, or is transmissible, by the odors arising from garbage or decaying animal or vegetable matter. A dead horse in the streets, killed by accident, may produce disgust and even symptoms of nausea, but it is incapable of giving rise to typhoid fever or any other communicable disease. Kitchen garbage does not customarily furnish a suitable culture medium for the propagation of disease germs. Consequently even were such material to be inoculated with the wastes of a sick room, it need not be feared that the disease germs will multiply.

This does not in any sense remove the necessity for promptly and permanently disposing of putrescible material. It merely changes the argument. It places the necessity of proper disposal upon the ground of nuisance, where it belongs. Dirt should be removed because it is dirt. Filth should be promptly and permanently disposed of because it is filthy. Nuisances from undue accumulations of city wastes should be prevented because they interfere with the reasonable comfort, well-being and efficiency of the citizens.

The relation between dirt and disease lies in the fact that carelessness with the one kind of waste leads to carelessness with other kinds and indifference to the harmless sort is generally accompanied by indifference toward that sort which is dangerous.

Dangers to Health. Wastes which are dangerous to health are produced in every city and their existence should not be overlooked by those who are charged with the disposal of the city wastes. In spite of the vigilance of public health authorities, infectious material from patients suffering with tuberculosis, typhoid fever, scarlet fever, diphtheria and many other diseases is occasionally thrown out with the refuse of houses for the city scavengers to remove. In cities provided with sewerage systems, it is rare for the dejecta of typhoid pa-

tients, or, in fact, the infectious wastes of any disease, to be genuinely disinfected before being flushed into the sewers, and in towns which do not have sewers, some of the products of disease are often thrown out under more or less disguise. Not infrequently, employees of the department charged with the duty of collecting garbage and other household refuse are privately paid to take away bedding and other material believed by the householders to be unsafe because of its use in the sick room.

It is essential, that whatever disposition is made of the wastes which are collected, there should be little or no chance that infectious material shall produce sickness. Therefore the collections should be handled or picked over as little as practicable. When this work can be done on a large scale with the aid of mechanical contrivances and under competent supervision, the reasonable objections which can be made to it are in large part overcome.

Such separation as is required for the purpose of facilitating collection and disposal should be made as far as possible at the household. New York divides its household wastes into three parts: kitchen wastes, called garbage; ashes, including metals and glass; and refuse, made up largely of non-putrescible and easily inflammable material. The garbage is delivered to a contracting company which extracts the grease. The ashes and similar material are used for filling in low-lying land.

Methods of Final Disposition. In England, it is customary to collect all the refuse of the houses in one receptacle and to burn the material in furnaces called destructors. Many large and small cities in Europe employ this principle. Frequently a sufficient amount of heat is produced in the burning to raise steam in boilers and so produce electricity for lighting and other useful purposes.

On the continent of Europe, the decomposable wastes of small cities are often made into compost. In America considerable use is made of the principle of burying. Either of these two methods may be carried out without serious objection, provided the amount of waste to be disposed of is not too great and land of suitable location and cost can be secured.

The apparatus, such as destructors, reduction plants, vehicles for the collections and receptacles for temporarily storing the wastes of the households and streets until they can be removed by carts, differ in different places according to local circumstances and especially

with the size of the municipality. For the most part, the scavenging apparatus in use in American and European cities and towns is lamentably crude and unsatisfactory. The carts, particularly, are awkward, heavy, unsanitary and hard both on man and beast. But little progress has been made in developing efficient apparatus or methods of scavenging.

The plan of flushing the pavements of cities has some good and bad points and, on the whole, when properly done is desirable. The best examples of this work are in Europe. Machine brooms are among the most useful types of apparatus for street sweeping. The patrol system of collecting street refuse is excellent in crowded thoroughfares, but should not be necessary elsewhere.

Summary. In the foregoing remarks, attention has been called to some of the essential principles which should be held in mind in arranging for the disposal of the wastes of a city. It is desirable to employ the services of a competent engineer to devise the details. Emphasis should be placed upon the following points:

Coöperation is necessary between those who produce the wastes and those who dispose of them.

Unnecessary litter should be prevented.

Legally enforceable rules and regulations should be formulated and the assistance of magistrates insured to enforce them.

It is important to maintain especially clean conditions in those parts of cities which otherwise may become the dirtiest.

Scientific facts should be recognized as to the causation of disease and the necessity of preventing nuisances because they are nuisances admitted.

It should be acknowledged that cleanliness is costly and that it is a wise, though not inconsiderable, investment for a city to keep itself continuously clean.

It is impossible to make standard plans and specifications for the disposal of city wastes which will apply to all situations.

It is desirable to employ a competent person to study the local situation and then make a plan for the disposal of the wastes. A young man who is familiar with the scientific principles of scavenging should be employed to carry out the plan and work out the practical details as the opportunities and requirements of the situation permit.

SUBURBAN DEVELOPMENT

BY CAROL ARONOVICI, PH.D.,

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The astounding growth of urban communities in the United States and throughout the civilized world that has taken place within the life of the generation just past is at last facing a hopeful reaction. The city has, humanly speaking, proven to be a failure.

Congestion of population and concentration of industrial activity have been over-capitalized and no contingent means have been provided to meet the needs for a normal human development and efficient industrial growth of our cities. These two important factors are now pointing the way toward a hopeful solution of ultra-urbanization of all human activities. The decentralization of human habitation first found expression in the splendid development of our metropolitan suburbs, and now the growing need for industrial expansion, the over-capitalization of city land values and a demand for more healthful industrial conditions are fostering an industrial exodus countryward that presents one of the most hopeful tendencies in modern society.

It is through this exodus that we hope to solve a considerable share of our housing problem, improve living conditions and create a closer coöperation and deeper sympathy between the worker and his work. Pullman, Gary and Fairfield, in this country; the many flourishing garden cities of England and Germany, the rapid growth of suburbs in the vicinity of metropolitan cities and the numerous industrial satellite cities are convincing evidence of the decentralization of human habitation and industrial activity.

An impressive statement and a clear conception of the appalling concentration of population that has taken place in our midst can be derived from a study of the statistics of population of the thirteenth census. Of the total land area of the United States, amounting to 1,903,289,600 acres, only 1,185,795.8, or 0.026 per cent of the total land area of the country, are occupied by the metropolitan cities, which contain 18.59 per cent of the total population of the country, 91,972,666 in 1910. If we consider all cities of the United

States of over 30,000 population we find that they contain 27,316,407 people, or 29.76 per cent of the population of the country, living upon an acreage of 2,335,664.6 or 0.123 per cent of the total land area of the country. In other words, while the total land area of the United States is sufficient to allow each person over 20 acres each, the people in the cities of over 30,000 are living on the average of about 12 to the acre.

While this enormous congestion has been developing a return to the open country and the smaller communities has taken place.

If we consider the communities within 15 miles of the limits of the American metropolitan cities we find constantly growing and prosperous residential and industrial communities which occupy (3,531,736.4 acres) over three times the amount of territory occupied by the metropolitan cities, the satellites of which they are, and accommodate only a little over one-quarter the number of people.

If we consider the cities of 200,000 population or more we find that the cities proper have increased at the rate of 33.2 per cent during the period that elapsed between the census of 1900 and the census of 1910. The outlying districts of the same cities have increased at the rate 43.0 per cent during the same period of time.

These are hopeful signs that should be seriously considered as one means of decentralizing our business and residential life and reducing congestion, if its complete abolition is impossible. The protection of these outlying districts against the repetition of the evils of the metropolitan cities can be secured only through proper suburban planning.

In Pennsylvania, a section of the country with which the writer is especially familiar, this development of the smaller industrial and residential communities is clearly evident from the census figures. When we compare the growth of the larger cities with that of the smaller populational units we find that while the cities of more than 100,000 population like Scranton, Pittsburgh and Philadelphia, have grown at the rate of 28.9 per cent in the last ten years, the communities of from 10,000 to 25,000 have grown at the rate of 42.1 per cent and the communities of 2500 to 10,000 at the rate of 52.6 per cent in the same period of time. The rate of increase in population in the metropolitan city of Philadelphia was only 21.3 per cent or two and a half times less than the communities of less than 10,000 population. These figures are extremely significant from the point

of view of the town planner and the student of the evils of congestion, as they represent a new and far-reaching tendency in the distribution of population.

A close examination of the figures relating to the counties adjoining the county and city of Philadelphia shows that the population of the two counties in which industrial development was made possible by transportation facilities, power, etc., has increased very rapidly in the last forty years. In the case of Delaware County, where conditions for industrial development are especially favorable, the increase was 199 per cent, as against 127 per cent for Philadelphia.

In Montgomery County the increase was 107 per cent in the last forty years, a rate that represents a considerable advance over the counties which have not developed industrially and is very close to the rate of growth of the metropolitan city.

The facts just stated point the way toward the solution of one of our most serious problems, "congestion," but the hope for the solution of this momentous problem is not in the mere shifting of population, but in the far-sighted control of this growth in the direction of constructive community planning. The small communities are quick to imitate the cities in both their good and bad features and while they realize the importance of the growth of population, they are often ill prepared for or entirely ignorant of the responsibilities involved in the educational, physical and moral care of the increasing numbers of human beings.

Health conditions in the smaller cities and towns which have been affected by industrialism are generally as bad or worse than those of the larger cities. The city slum is being transferred into the open country and the barrack-like tenement often stands out in bold defiance to nature's beautiful surroundings. Industries seeking the smaller communities are permitted to locate anywhere, without regard to human or community needs. Doctor Hegemann characterized the congestion in the business and financial district of our cities as "the slumification of business centers." The suburban development of recent years may, in many instances, be justly described as "the slumification of the countryside."

The city, with its congestion, narrow and ill-kept streets, dangerous traffic distribution, lack of play facilities, poor housing provisions, high morbidity rates, has proved wasteful of human resources. The city has mistaken industrial development for prosperity and

increase of population for genuine civic advancement. The individual has been lost sight of except as he adds to the human bulk. Humanizing influences have been relegated to a weak and ill-fitting educational system that wholly neglects the element of local patriotism, which is essential in all community building.

The present age is one of tireless, extravagant and extensive building. Cities are built in a week and hamlets grow overnight. We do not depend upon the past for the beginning of our work and need not depend upon the future for its completion. We are the masters of creation of our cities and towns. If this age is forgotten or condemned for its work, it will be due to our art of building, because that is the only lasting heritage we shall leave that is all ours. Science and art and literature we may have and our share in the chains of progress is being done, but the cities are all our own and must stand the test of endurance, fitness, healthfulness and beauty or be forgotten.

As all evils must sooner or later find their remedy, so our abhorrent methods of city building are finding their remedy in the development of the town-planning idea.

Parks, playgrounds, proper homes, transportation, water supply, amusement centers, art galleries, schools, museums, etc., are essentials of civilized community life and constitute the field of town and city planning. The town and city planner must coördinate these essentials and so humanize them as to embrace the highest ideals of present community development backed by a community patriotism that will stand the test of the highest standard of social well-being.

The cost of community planning may be measured in dollars and cents, but a more accurate measurement is to be found in the rate of infant mortality and the daily deaths and the amount of ill-health and crime that we must suffer and pay for. The well-planned garden cities of England and Germany are teaching us the lesson that health, morals and industrial efficiency are possible of control by proper community planning. Statistics show us that density of population goes hand in hand with frequency of deaths, sickness and crime. On every side we find overwhelming evidence of the value of proper community planning and development and the growing desire for better living conditions among the people. The diagnosis is made, the remedy—town planning—is known and we shall pay a well deserved penalty if we do not apply it.

The suburbanizing of the wage-earner is a great social and economic opportunity. The increase in the population of our smaller cities and towns as well as the growing countryward industrial exodus that is taking place in this country hold out a golden opportunity, and it is for us to say whether this growth will result in a contamination of the open country by the city slums or whether garden communities will look upon the bleak horrors of our urbanized existence and give men, women, and children a new lease on life and industry and chance to serve men rather than to enslave them.

The large cities present a possibility for reconstruction, for palliative town planning, while the younger cities and towns have the open country before them, little to rebuild and readjust, and a great advantage over the congested city slums which they have now the opportunity to condemn to everlasting death by their superior living advantages and their advantage for shaping their future growth to meet future as well as present needs.

The Utopian city of yesterday can be realized in the growing suburbs of our own times and the future will praise us or blame us as we realize or fail to realize the practical ideals that science and art and a living democracy make possible this day.

CITY-PLANNING LEGISLATION

By FLAVEL SHURTLEFF,

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As the term "city planning" is now very generally interpreted, any legislation which contributes to the successful carrying out of plans for a city's physical growth should find a place in a comprehensive survey of city-planning legislation. To make such a survey would be rather too ambitious just now when the subject of city planning is so little known to the indexers of legislative records and the material must be searched for under a variety of headings. Moreover, very effective tools for the city planner are ground out of the routine of departmental work. Such was an act passed by the Massachusetts legislature of 1913, which provides that *assumed valuations* may be introduced as evidence of value in cases where the municipality is a defendant in an action brought to recover compensation for the taking or damaging of land. This act promises to be a valuable help to the municipal departments in charge of condemnation work and is as much a city-planning measure as the legislation with a more prominent city-planning label to which we must confine this survey.

City planning or city building is primarily a question of the municipality's ownership and control of land. Legislation to aid in city planning, therefore, will be concerned first, with such measures as affect the municipality's general land, paying less in each regarding its use by others and accord with the measures of all other state agencies with city-planning functions.

City Planning Commissions

During the last few years there has been increasing legislative activity in the administrative field.

Connecticut in 1917, by enabling and authorizing the city of Hartford to appoint a city-planning commission. This was the first legislation of the kind in the New England States. A. V. C. similar bill was passed by the city of New Haven.

Maryland, in 1910, passed an act creating a planning commission for the city of Baltimore.

New Jersey, in 1911, allowed cities of the first class to appoint city-planning commissions. Pennsylvania, in 1911, passed a similar act for cities of the second class (Pittsburgh and Scranton).

New York, in 1913, authorized cities and villages to appoint planning commissions.

Massachusetts, in 1913, made mandatory the establishment of local planning boards in cities and towns above 10,000 population.

New Jersey, in 1913, amended the act of 1911 in several important details.

Pennsylvania, in 1913, created an additional executive department in cities of the third class to be known as "the department of city planning," and established the first suburban metropolitan planning commission in the United States for the vicinity of Philadelphia.

Ohio, in 1912, adopted an amendment to its constitution which allows cities to manage their own affairs, and the way is open for including in city charters a plan commission as one of the administrative agencies. Cleveland and Dayton have already taken advantage of this opportunity—Cleveland by a clause in the charter making mandatory the appointment of a city-planning commission; Dayton by a permissive clause.

The Massachusetts legislation is unique in putting the stress on the human side of city planning. The local planning boards are to "make careful studies of the resources, possibilities and needs of the city or town, particularly with respect to conditions which may be injurious to the public health or otherwise injurious in and about rented dwellings, and to make plans for the development of the municipality with special reference to the proper housing of its people."

Connecticut legislation is unique in making the city-plan commission one of the agencies which may exercise the power of excess condemnation. The city may buy and hold real estate for establishing parkways, park grounds, streets, highways, squares, sites for public buildings and reservations in, about, along and leading to the same, and after the completion of such improvements "may convey and give good title to any property thus acquired and not necessary for such improvements, . . . and may for the purposes of this section act through said commission."

Aside from these differences, the powers given the plan commissions are much the same. They are directed to prepare plans more or less comprehensive for the systematic development of the city and usually are directed further to act in a mildly advisory capacity by investigating and reporting on such questions as the design and location of public buildings, and the location, alteration and extension of streets, parks and other public places. It is as if the legislature were convinced that the growth of the city should be directed and the work of the various municipal departments should be correlated, and that this task was for a new agency, but that it was entirely at a loss how to direct the energies of the proposed agency and therefore merely set it loose on the job with but little guidance. This characterization is not true of the Pennsylvania act for third-class cities or of the section in the Cleveland charter making mandatory a city-planning commission. The first specifically provides that:

Clerks of council shall, upon introduction, furnish to the city-planning commission, for its consideration, a copy of all ordinances and bills, and all amendments thereto, relating to the location of any public building of the city; and to the location, extension, widening, narrowing, enlargement, ornamentation, and parking of any street, boulevard, parkway, park, playground, or other public ground; and to the relocation, vacation, curtailment, changes of use, or any other alteration of the city plan, with relation to any of the same; and to the location of any bridge, tunnel, and subway, or any surface, underground, or elevated railway. The said commission shall have the power to disapprove any of the said ordinances, bills, or amendments, which disapproval however, must be communicated to councils, in writing, within ten days from the introduction of said ordinances; but such disapproval shall not operate as a veto.

All plans, plots, or re-plots of lands laid out in building lots, and the streets, alleys, or other portions of the same intended to be dedicated to public use, or for the use of purchasers or owners of lots fronting thereon or adjacent thereto, and located within the city limits, or for a distance of three miles outside thereof, shall be submitted to the city-planning commission and approved by it before they shall be recorded.

Under the Cleveland charter a commission of even greater power might be created.

There shall be a city-plan commission to be appointed by the mayor with power to control, in the manner provided by ordinance, the design and location of works of art, which are or may become, the property of the city, the plan, design, and location of public buildings, harbors, bridges, viaducts, street

fixtures and other structures and appurtenances; the removal, relocation and alteration of any such works belonging to the city; the location, extension and platting of streets, parks and other public places, and of new areas; and the preparation of plans for the future physical development and improvement of the city.

Here are the first suggestions of how the new correlating agency is to succeed in its delicate task of keeping a gentle but controlling hand on the policy of those municipal departments whose work affects the development of the city plan.

Excess Condemnation of Land

Among the measures affecting the municipality's ownership and control of land, excess condemnation, or the taking by a municipality through its power of eminent domain of more land than is needed for the actual construction of an improvement, has been urgently pressed upon the law-making bodies as the most vital need in connection with city building. As a financial measure it has been urged that its use under proper conditions would allow the city to recoup much of its outlay in an improvement by the sale of surplus land at a higher price. It has also been pointed out that only by a larger right of condemnation can the city control the use of land abutting on parks, parkways or widened thoroughfares and thus secure the full commercial as well as the esthetic return from the improvement.

In 1904 the legislature of Massachusetts ordered an investigation into European methods of taking land and as a result of the report by the commission appointed, it passed the first legislation in which was incorporated the principle of excess condemnation, limited narrowly, however, to giving the city the power to take "by right of eminent domain the whole of any estate, part of which is actually required for the laying out, alteration or location by it of any public work, if the remnant left after taking such part would from its size or shape be unsuited for the erection of suitable and appropriate buildings and if public convenience and necessity require such taking."

Ohio, in 1904, and Maryland, in 1908, adopted the excess condemnation principle in legislation for the protection of parks, parkways and approaches to public buildings and only for these specific purposes.

The Virginia assembly of 1906 gave power to municipalities to take more than was necessary "when the use of the land proposed to be taken would impair the beauty, usefulness or efficiency of the parks, plats or public property, or which by the peculiar topography would impair the convenient use of a street or render impracticable without extra expense the improvement of the same."

Connecticut legislation on the subject has already been noted under the discussion of plan commissions.

By the acts of Pennsylvania in 1907, cities are allowed to acquire by appropriation private property within 200 feet of parks, parkways and playgrounds. Up to 1912 there was no use made of any of this legislation, but in that year Philadelphia appropriated land in excess of actual needs in connection with the Fairmount Parkway. The question of the constitutionality of the act was raised and the lower court decided that the city could make the taking, but the supreme court of the state overruled this decision, holding that the act was unconstitutional.

Because of the doubtful constitutionality of excess condemnation acts, the legislatures of New York, Massachusetts and Wisconsin passed resolutions referring to the people the question of adopting an amendment to the constitution containing the principle of excess condemnation, and the people of Massachusetts and Wisconsin have already adopted that amendment. The New York amendment was defeated, but another has since been passed by the legislature and was accepted by the people in the fall of 1913. It is interesting to find that the sweeping language of the first New York amendment providing that when private property is taken for public use by a municipal corporation "additional adjoining and neighboring property may be taken under conditions to be prescribed by the legislature by general laws; property thus taken shall be deemed to be taken for a public use," has been greatly modified and follows closely the language of the Massachusetts amendment, providing that cities may take "more land and property than is needed for the actual construction in the laying out, widening, extending or relocating of parks, public places, highways or streets; provided, however, that the additional land and property so authorized to be taken shall be no more than sufficient to form suitable building sites abutting on such park, public place, highway or street."

Assessment for Special Benefit

The peculiarly American method of distributing the cost of improvements is by assessment on the property specially benefited by the improvement. Originally employed chiefly to defray the cost of street improvements, such as surfacing, grading, curbing, etc., it is now the very general practice, except in some of the New England and Southern States, to include some or all of the cost of land taking as one of the items of improvement cost which may be assessed, whether the taking is for a street widening or extension, or for parks or parkways. The principle has been most thoroughly tested under the park laws of Minnesota and Indiana and in the provisions of the charter of Kansas City, Mo., relating to parks.

In Ohio, the supreme court long held that special assessments to pay the cost of land taking violate the state constitution, but in 1913, a constitutional amendment was adopted which makes the law of Ohio uniform with that of the rest of the United States.

Condemnation Procedure

The legislation which has brought very helpful changes in methods of condemnation procedure is of the sort that was described at the outset of this article and easily escapes attention. We have already noted the legislation in Massachusetts which allows the introduction in evidence of assessed valuations in condemnation cases. The same legislature directed that condemnation cases should be advanced for speedy trial, thus eliminating one cause for the great delay in putting the city in possession of land taken by eminent domain. In the same year Oregon passed legislation expediting the possession of land by the municipality in condemnation cases, and minor improvements in condemnation procedure were brought about by legislation in Maryland, Kansas and Missouri.

Municipal Regulation of Private Land

There has been but little legislative activity in the field of regulation of privately-owned land by the municipality, apart from the provisions concerning the height of buildings adopted in Boston in 1904 and 1905, and in the federal capital in 1910. The Boston regulations prescribe an arbitrary limit of 125 feet for all buildings in

the city and establish two building zones in each of which buildings have an arbitrary maximum height and are limited further by the width of the street on which they are located. The Washington regulations have developed to a greater degree these same principles. It is worth while enumerating some of them:

Section 5. No building shall be erected, altered or raised in the District of Columbia in any manner so as to exceed in height above the sidewalk the width of the street, avenue or highway in its front, increased by twenty feet.

No building shall be erected, altered, or raised in any manner, as to exceed the height of 130 feet on a business street or avenue as the same is now or hereafter may be lawfully designated, except on the north side of Pennsylvania avenue between First and Fifteenth streets, northwest, where an extreme height of 160 feet will be permitted.

On a residence street, avenue or highway no building shall be erected, altered, or raised in any manner, so as to be over 80 feet in height to the top of the highest ceiling joists or over 85 feet in height at the highest part of the roof or parapet, nor shall the highest part of the roof or parapet exceed in height the width of the street, avenue, or highway upon which it abuts, diminished by 10 feet, except on a street, avenue, or highway 60 to 65 feet wide, where a height of 60 feet may be allowed; and on a street, avenue or highway 60 feet wide or less, where a height equal to the width of the street may be allowed.

From this casual survey it is evident that a start has been made in every field of legislative activity affecting city planning. With the increase in number and experience of city-planning commissions we shall expect both helpful amendments in the legislation creating the planning agencies and a greater body of precedents to facilitate the execution of city plans.

FINANCING A CITY PLAN

BY NELSON P. LEWIS,

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It seems rather odd that intelligent people living in rich and growing cities should have been so slow to realize that the orderly development of such cities requires something more than a scheme of rectangular blocks of certain conventional size and shape with an occasional open space and a few extra wide streets thrown in. They are, however, beginning to understand that something more in the way of a plan is needed, and that the problem is one to the solution of which the most expert skill, the widest experience and the most careful study of economic and social conditions must be devoted. This awakening was first evidenced by efforts to correct defects in cities as they already existed. This required courage and involved enormous expense, often so great that the task seemed hopeless, and not infrequently interest waned and disappeared. Curiously enough, the idea that if old defects could not be corrected a repetition of the mistakes could be avoided was slow to take hold. With all the talk about and interest in city planning, most of our cities have gone ahead consistently repeating their old blunders and failing to profit by them. Having found that the correction of mistakes was costly, perhaps they thought, if they thought at all, that the avoidance of further mistakes would also be expensive, or at least that a good plan which would make intelligent provision for future development would cost more than the kind of plan with which they were familiar. That such a plan would be worth more, is not a debatable question. But would it cost more? It need not, and it might cost less.

To discuss the relative merits of different kinds of treatment is beyond the scope of this paper, which is to deal only with the question of how the expense of carrying out a proper plan is to be met. In considering this question, the cost of carrying out a plan will be considered, not the cost of its preparation. Considerable money may be spent upon the preparation of a plan, but it will be trifling in comparison with the cost of carrying it out. Let me say in passing that continuous study of the past growth of the city, of the movement

of its population, the changing of land values, and other details of this character, will often prove of more real value in determining the plan for future growth than the inspiration of experts called in for the occasion who are expected to solve the problem in offhand fashion and submit a solution within a month or so. Emphasis may be placed upon one general principle which should control the development of a plan for future growth, for it will have an important bearing upon the manner in which the cost of carrying it out is to be met. That principle is this: The plan should include a general system of arterial streets which will permit easy movement from any part of the city to any other part; it should recognize the vital necessity of transportation by water or rail or both, as the case may be, and should provide for the creation and expansion of railway and shipping terminals and the connection of different terminals and for the development of manufacturing plants which can be readily served by these transportation lines; it should provide for open spaces for healthful recreation, not concentrated in one part of the area under consideration, but so distributed as to be within easy reach of the future population; it should so arrange the main thoroughfares that public or semi-public buildings may be so placed when the time comes for their erection that they will be not only convenient of access, but that they can be seen, assuming that they will be of such a character that they should be seen and not be hidden away. So much the plan should include and little, if any, more. The precise location and dimensions of every subordinate residential street should not be placed upon the plan at this time. The larger the areas between main streets, the more readily can they be adapted to such detailed planning as seems best when the time arrives. The more latitude allowed for variety of treatment within such areas, the more attractive and the more livable will this part of the city be. In most American cities the conventional lot unit is a rectangle 25 feet wide and 100 feet in depth. Is that the most rational and the most economical unit for this purpose? It has become a habit, but is it anything more? Will it be considered the most advantageous size and shape of lot twenty years from now? It is at least doubtful. Why, then, fill in the details of the plan to such an extent as to force upon the next generation a development which may prove undesirable and uneconomical? The natural drainage areas will control to a large degree the location and direction of the main streets.

The main sewers which will be built in them will provide for a certain estimated population and a certain proportion of impervious area, and this will not be materially affected by the kind of subdivision which will ultimately take place. Meanwhile, individual developers of real estate may plan and carry out improvements according to their own ideas and to meet the public demand, provided always (and this proviso is of the utmost importance) that their plans for such developments shall first be submitted to and approved by some authority which shall exercise a wise discretion and be clothed with ample power to enforce its requirements.

In considering the manner in which the cost of carrying out such a plan is to be made, namely, the cost of the acquisition of the land needed for streets, open spaces, parks, sites for public buildings, etc., and of the physical construction and improvement of the streets, one fundamental principle may be laid down, and that is that the burden of cost shall be in proportion to the benefit. In trying to apply this general principle we are at once confronted with a great variety of conditions. In the small town—and no town is so small that it does not need a plan—the creation of a public square about which or in which the chief buildings, including, perhaps, the churches, are to be grouped, is of general interest and benefit to the entire community. All public activities, and even recreation and amusements, will center there, and it will be conceded that the town itself should properly pay the expense. The most valuable property will be that fronting upon this square, so that if its creation results in special benefit to the surrounding property, that property will bear a correspondingly large burden. If the main street of the town needs a widening, straightening or extending, the benefit will again apply to the entire community.

But the town grows and becomes a city. Other main streets must be provided, other centers of activity or recreation are needed. These new projects will still result in some general benefit but in a large measure of special benefit. The effect upon the property in their neighborhood will be proportionately greater and more exclusive than in the case of the first village green or town square. The entire community will doubtless feel the benefit of the new improvement but in less degree, as it tends to create a new centre and diffuse, rather than concentrate, business and other activities. The town can still afford to contribute toward the expense, but the fair proportion to

be assumed by it will be less in proportion to the amount of special benefit resulting to the particular locality. The ability of the town or city to contribute toward the expense of such undertakings will vary in different cases, depending upon the other burdens which it may have assumed or to which it may have pledged its credit, depending upon whether the city is deriving substantial revenue from privileges granted to public service or other corporations or individuals, depending upon whether it is conducting certain activities at a profit or whether they are being conducted at a loss for the benefit of the public using them, and depending especially upon whether the city has already borrowed to such an extent that an issue of further obligations would be likely to impair its credit. Again, it remains for the town or city to determine, if it is to pay all or a portion of the cost of any particular improvement, and even if its credit is such that it can borrow the funds necessary, whether it will issue its bonds for a long term of years, or whether it will carry out the improvement on a cash basis by providing for it in one or more tax levies or by short-term bonds which will be retired soon after the completion of the work.

A large city is really a group of towns or smaller cities which have grown together. While there are certain great projects that are commonly deemed to be of general interest, there are few which do not involve some special benefit to a particular locality. If a new park is to be created, it needs no argument to prove that the property in its immediate vicinity will acquire a fixed character and that its value will be substantially increased. If a new and important public building is to be erected, there will be much interest in the selection of the site, and as soon as it is determined it will have a marked influence upon the property in its neighborhood, and it would not be difficult to give instances where, before the building was completed, the value of the surrounding property had at least doubled, especially if the public building is surrounded by considerable open space. If the city were, as some of our great cities now do, to construct a new rapid transit line bringing hitherto vacant lots within easy access of its business center, or if it were to provide a new waterway permitting docks and basins to be created in hitherto inaccessible swamps or lagoons, the effect upon these suburban lots and useless swamps can readily be foreseen. Now, if the property in the neighborhood of the new park, the new public building, the new rapid

transit line or the new waterway is to be increased in value by some act of the city, and if the owners of this property are to be enriched by this act, is it fair or just that these owners shall contribute no more per unit of assessed value toward the cost of the improvement which is to enrich them than do the owners of other property more slightly if at all, affected? To determine the precise amount of benefit will be well nigh impossible, but the recognition of the fact of the benefit and of the obligation to pay a special share of the cost in return for that benefit seems only a question of elementary justice.

In case of local streets having a width of 60 feet or less, it would be difficult to show any but local benefit, as such streets are designed to furnish light, air and access to the abutting property, and that property could fairly be required to pay the entire cost of the acquisition and improvement of the street.

A word as to the expense of acquiring streets. This is one of the most serious burdens placed upon the urban property owner, and it is difficult to understand why the taking for street purposes of a strip of land needed to give access to lots fronting upon the proposed street should involve payments at city lot prices for the land so taken when, unless it be taken, both it and the abutting lots would be nothing but acreage property. The city of Liverpool has had since 1908 a law which enables the city to take land for street purposes up to a width of 36 feet without compensation, while if the municipal authorities determine that in the case of a principal street 80 feet is required, no compensation need be made except for land taken in excess of 80 feet. This law, however, applies only to cases where the land to be taken and that which will abut upon the new street are in the same ownership and the owner will simply be furnishing the land to provide access to his own property.

But we are getting ahead of our story. In the case of main streets, which should be the first ones to be laid out and acquired, it is assumed that these will be of generous width for the reason that they will be used for neighborhood business and will accommodate neighborhood and even through traffic. The benefit derived from them will, therefore, be somewhat more than local, and the expense of their acquisition and improvement could be distributed over a somewhat greater area. In some cases there may be such general benefit as to justify the assumption of a part of the expense by the entire city.

To determine the exact proportion to be assessed upon the frontage, the part to be spread over a larger area, and the portion, if any, to be taken by the city at large, will often be difficult. The plan proposed by the writer, which appears to have met with quite general approval, is to assess upon the immediate frontage the entire cost of acquiring local streets up to a width of 60 feet. A street more than 60 feet wide will undoubtedly be somewhat more valuable to the abutting property, and the owner of that property should not, therefore, be relieved of all expense of acquiring a width greater than 60 feet. A fair division would be to assess upon the frontage that proportion of the cost of the wider street represented by the ratio of 60 feet plus one-fourth of the excess in width over 60 feet to the total width of the street, provided, however, that when the abutting property shall have been assessed for the equivalent of 80 feet in width of any street, no further local assessment be levied. A secondary area of benefit could properly extend half the distance to the next wide street, but the assessment should be decreased as the distance from the street increases.

The suggestions already made obviously apply to the location of new streets in territory slightly, if at all, developed. Sometimes a new main street will follow an old road which must be widened, involving damage to buildings, and a more generous treatment is needed. In applying the rule above given, it has been suggested that in such cases it would be fair to estimate separately the value of the land to be taken and the damage to the buildings and to add to the width of the street to be acquired a percentage equivalent to the ratio of the estimated building damage to the estimated land cost, obtaining an equated width of street to be used as above in determining the amount of frontage assessment and the amount to be placed upon a larger district.

But sometimes it will be necessary to cut through new and to widen old streets in the built-up portions of the city. In such cases the width of the street may not be an index of the local or general benefit which will follow. It may be that the cutting through of a 60 foot or even a 50 foot street will result in little local and of large general benefit. In these cases the amount of local assessment might fairly be determined by the land value only, the damage to buildings being included in the assessment to be spread over the larger area of benefit, or even in some cases to be assumed by the entire city. Such

projects might sometimes be in part or wholly financed by buying all of each parcel disturbed or one or more entire tiers of lots and selling the frontage on the new or widened street. The damages paid for taking portions of lots are likely to approximate the actual value of the whole plot, although the owner may be left with a remnant which he could sell for more than the value of the entire lot before the improvement. For the city to take advantage of the increase in value caused by its own act seems only fair. This would, of course, involve a larger capital outlay, and it would also require the right of excess condemnation, a right which is possessed by very few cities in this country and which appears to be reluctantly granted by state legislatures. But this is a big subject worthy of a special article, and cannot be discussed in this connection.

The aim of the writer is simply to make it clear that the cost of carrying out a rational city plan is not prohibitive and is within the reach of almost every city if the fundamental principle of distributing the cost according to benefit is consistently adhered to. A policy which is manifestly just will ultimately win popular favor provided it is consistently followed. The details of the plan for distributing the expense will vary in different cities, and no plan should be adopted until it shall have been carefully worked out and tested as to its fairness. Even then there will inevitably be special cases which will require special treatment, but efforts to secure special treatment for cases which are not exceptional, unless it be as to the position and political importance of the owners of the property affected, should be stoutly resisted, however powerful may be the influences exerted to that end.

In a paper presented to the Fourth National Conference on City Planning held in Boston in 1912, the writer laid down a few general principles which he believed should govern the distribution of the cost of city improvements. He has seen no good reason to modify them, and they will be repeated as the conclusion of this discussion.

1. Where there is local benefit, there should always be local assessment.
2. The entire city or the metropolitan district should bear no part of the expense unless the improvement is in some degree of metropolitan importance and benefit.
3. Assessments should not be confined to the cost of acquiring and improving streets, but should extend to any improvement which

will increase the value of the neighboring property, and should be apportioned as nearly as possible according to the probable benefit.

4. A workable policy once adopted should be consistently adhered to.

5. The determination of a policy and its application to each case should be entrusted to a permanent technical bureau or to a board composed of men especially qualified, whose terms of office should so overlap as to insure continuity of policy and purpose.

RIVER-FRONT EMBANKMENTS

By LESLIE W. MILLER,
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To the urban river the embankment is an absolute necessity; unrecognized, it is true, in the case of most cities until so late as to make its realization needlessly difficult and costly but none the less sure of ultimate recognition for all that. The most obvious reason for the neglect of the river fronts of most American cities is doubtless public apathy, pure and simple, and apathy from which a good many other things suffer as well as waterways, but a fundamental misconception of what is charming and desirable in waterways generally is, I believe, partly responsible too.

The beauty of the naturally winding stream with its banks untrammelled by any artificial restraints, and even of the estuary with its tides in ceaseless ebb and flow, is dinned into us so persistently in our early years that it is very hard for us to get over the feeling that our first and last duty to so obviously natural an object as a river is to let it alone, and on the whole there is hardly anything that we are taught to dread so much, and to avoid so scrupulously, in topography as in conduct, as the artificial. It all comes back, of course, to the fact of the overlapping or the confusion of the conflicting claims of city and country. You can have natural beauty in the country and the artificial easily becomes the impudent it is true, but the city is distinctly and unreservedly a product of human ingenuity and artifice and the more frankly its true character is expressed in its constructions the better. The river has as much right to come into the city as the people have, but like them it should leave its rustic ways behind; no more meanderings, and no more mud banks. Urbanity in rivers, as in men, means tidiness and culture, and culture means restraint and adaptation to environment.

I put the esthetic reason first because it is evidently the most cogent in spite of the reluctance of many well-meaning advocates of civic betterment to accept this conclusion and the tendency among people generally to underestimate its claims, but the sanitary and economic reasons are just as sound and, in some quarters, more read-

ily admitted. The neglected urban river promptly degenerates into an open sewer, as everybody knows, and even if the remedy of intercepting sewers does not necessarily imply embankments the civic prudence that provides the one is pretty sure to suggest the other, especially where the sanitary improvement will naturally follow lines that involve a good deal of river bank reclamation and that obviously coincide with desirable parkway extensions. Besides, the public health is not concerned exclusively with what is underground, the sewer is all right but so is the open sunshine and the enterprise that builds the one will demand the other. Now the river bank is the natural place to take the air the world over. The water courses provide, always and everywhere, the most accessible and inviting of pleasure grounds, and the saddest mistake that the growing town ever makes in the way of wasting its resources through want of foresight is its neglect of the river which almost universally runs by it or through it.

It is usual to blame the railroads for the squalid water fronts that are far too common in American towns, but this is a lame excuse and, as a matter of fact, there ought to be a good lesson rather than a cause of complaint in the present perfectly natural and, as far as it goes, perfectly proper development of the waterways as commercial thoroughfares. The railroads did well to appropriate the river banks to their own uses; the only trouble is that the cities have done ill in not seeing to it that their rights were respected and their interests advanced as well as those of the railroads, by the kind of treatment which the river banks received. Even where it does not go underground as it usually will in following the embankments of great cities, a railroad is not necessarily an eyesore and a nuisance, by any means, and as electricity replaces steam there will be less and less excuse for such objectionable qualities as we have been accustomed to regard as their inevitable accompaniments. A very little experience with such supervision as is already exercised by art juries and art commissions has taught us that bridges, viaducts, etc., may be real architectural embellishments just as well as unsightly blemishes if the public will insist on having its rights respected and a decent regard for appearance recognized as a legitimate factor in the designing of such structures. Few sights are more disheartening than the ragged edges, of which the river front is sure to be raggedest and most unkempt, of the vast majority of American towns which are fortunate

enough to have any railroad facilities at all. But it is worth remembering that this untidiness has nothing to do with the necessities of the case and that in countries where these things are better understood and the demands of good taste more respected, the railroad and its adjuncts constitute not only unobjectionable, but very often indeed, exceedingly impressive features of the place.

It is coming to be so here in the case of the passenger terminals of the great cities and it is hardly conceivable that the advantages of a dignified treatment of so potent a force in modern civilization will long be limited to a single feature or to a few exceptionally favored localities. The railroads have not only appropriated the river banks, they are rivers themselves; they have contributed enormously to the growth of the towns they skirt—in unnumerable instances they may almost be said to have actually created them—and they have a right to a good and prominent place in their plan. It is all wrong that they should look as they often do, as if they were sneaking in by a back door apparently ashamed of themselves and the part they play in the economy of the place, when they might come in with all the pomp of conquerors. No, there is no need of the squalid railroad environment on the river bank or anywhere else and the fact that the railroad is already there cannot be accepted any longer as an excuse for neglect and unsightliness in what ought to be the most attractive part of the city. But, in all great cities at least, and in many of the smaller ones too, for that matter, this means that there will be embankments with the railroads underground, as they are in Paris and London. It may, I think, be regarded as settled that the subway is indispensable, for the urban embankment is nothing if not a parkway, and the parkways with railways in them or over them are almost unthinkable, but underground is the best place for the railroad anyway, whenever you can afford it, and this is one of the times when you have got to afford it. It would be a mistake, however, to regard the expense of such an improvement as an extravagance. Considered as an investment pure and simple, nothing pays a city better than this kind of reclamation of what is bound to be about the best part of it, if it is not treated in such a way as makes it about the worst. It is curious how the very names by which they are known indicate which of these two characters has been developed in a particular locality. Water front spells dignity and charm almost anywhere while waterside has come to be a synonym for

much that is most unspeakable. The river, which is largely responsible for the very existence of the city, is sure to play a prominent part in its life and it is almost inevitable that where its neighborhood is not treated with becoming respect it should promptly degenerate into a slum. Now, all esthetic considerations aside, slums do not pay. Even on the lowest possible ground of dollars and cents, the reclamation, or conservation, of its river banks presents as good an opportunity for profitable business as a city can have. Money must be spent of course—all improvements mean capital invested—but in the long run nothing pays like judicious improvement. The civic betterment, which the present day is so much occupied in discussing, is chiefly concerned with three things uniformly neglected in the early days of almost every center of population and earnestly striven for when civic consciousness is at last awakened. None of the three, housing, circulation or recreation, will take care of itself. The character of residential sections, the adequacy of avenues of communication, and the provision and proper location of parks and playgrounds are all things which if secured at all are the result of deliberate and arbitrary interference on the part of the constituted authority of the municipality with the "natural" tendencies which unregulated individual interests are sure to develop.

The river embankment question embodies so obviously and in such even proportions all three of these phases of the civic betterment problem that it may fitly serve as the type, and not unfairly be made the test, of progress in the development of civic ideals.

The embankment is first of all a parkway, but this implies an avenue, if not of commerce then of recreation, possibly, and even preferably, under certain conditions, both. Certainly the promotions of such forms of commercial distribution as belong of right to the riverside, and provision for which by means of commodious and attractive quays would almost of necessity form a prominent feature of the wall which fixes anew the actual margin of the stream, should be recognized as a most important factor in the whole proposition. Curiously enough this is one of the features of the subject that is least understood and such active opposition as the improvement is likely to encounter usually comes from the dread of injuring—after the railroads—the commercial activities which make more or less use of the localities in question. This is all a mistake of course. The quays which will form an essential feature of the embankments will

take much better care of the traffic that belongs to the water than is possible under the unkempt conditions that precede the improvement and the active life of this increased traffic will always constitute one of the chief charms of the results attained.

And the neighborhood itself, what of that considered as a place to live? Are not the advantages that will accrue to it from the real estate assessors' point of view the most obvious and compelling after all? We have fought very shy of the urban housing question so far, contenting ourselves mainly with schemes for relieving congestion, which means planning and hoping to induce people to live as far away from their work as possible. This is well enough as far as it goes, and it must be admitted that the progress which rapid transit has made in recent years has enabled it to go pretty far, but however far this idea is carried and however extended the suburbs may become, it must not be forgotten that urban life means condensed population and while it is quite true that thousands of citizens will be able and ready to live at an indefinite distance from their places of business, the millions who do the real work will never have either the means or the inclination to do so, and the problem of city housing will still remain substantially the same problem that it has always been.

This means that the city is not to be made habitable by schemes to take the people out of it. Places for them to live must be provided in the city itself or the question of urban residence is not faced at all. Now urban housing of a condensed population means flats and family hotels; it cannot possibly mean anything else. And to talk about substituting cottages in Arcadia for homes in the city is simply to beg the whole question. City housing properly speaking then is successful to just the extent that it can be kept central and no city can afford to have waste land in its centrally located portions. The river embankment is sure to be central; if properly treated it is sure to be attractive, and the fairly big buildings in which the real towns-people of the city of the future will certainly live cannot have a better location than that which the embankments will provide.

Materially, then, as well as morally, from the point of view of the resident as well as that of the trader, for the sake of convenience and utility as well as of beauty and the public health, no city can do better than take care of its water fronts and no fairer measure of its civic consciousness and civic pride will be available than the spirit in which it improves the opportunities which the river embankment affords.

TOWN-PLANNING LIBRARY¹

BY JOHN NOLEN,

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The actual achievements of American cities in city building, in the sense in which that term is used in Germany, or in laying out and constructing garden suburbs, as the English town planners define them, is as yet relatively slight and unimportant. The promise for the future, however, is bright, because we realize that changes in our cities and towns, if they are to be far-reaching, must spring from the people, and be at bottom an expression of the life of the people. We do not want mere experts' cities unless these various experts—engineers, city planners, landscape architects and architects—show themselves capable of expressing and interpreting the best impulses and highest conceptions of business men, of citizens, and of fathers and mothers and children for true city planning, and make cities that will serve the needs, physical and spiritual, of the people.

By what steps are we likely to get results? One of the principal is to recognize that changes in our practice can be brought about only by changes in public opinion. We must find more ways and better ways of forming intelligent public opinion, and of giving it effective expression.

One of the most useful and available methods of arousing, informing and directing public opinion is through the public library. Each city or town should have a representative collection of books on this subject, made easily available to the casual reader as well as the student. While such a library need not be large, it should give comprehensive surveys of the subject from different points of view, and cover all the essential elements.

Town planning in the modern sense is so new and vital a topic that much of the best material is in current periodicals, reports, and proceedings of national associations. Books, with few exceptions, are not up to date. The advances in the profession are being made by men who are too busy to formulate their results in a volume.

¹The title of this paper should be understood as including all subjects allied to town planning, such as housing, sanitation, etc.

A town library ought to give clear and definite general surveys of city planning from a number of professional viewpoints; it ought to give the reader an opportunity, for example, to know how city planning is viewed by the engineer, the architect, the landscape architect, the health expert, the sociologist, the publicist, the legislator and the city administrator. To this should be added, perhaps, the view which might be called that of "the man in the street."

The view of the engineer is particularly well expressed in the German treatises on the subject, especially by Dr. Stübben and Dr. Robert Wüttke. There are also valuable articles and reports by Nelson P. Lewis, B. A. Haldeman, Frank Koester, F. L. Ford, J. R. Freeman, Bion J. Arnold and Calvin Tomkins. A useful volume from this point of view is entitled, *Sanitary Roanoke*, by Emerson and Whitman.

From the point of view of the architect the two most valuable general surveys are those of H. Inigo Triggs, *Town Planning, Past, Present and Possible*; and Raymond Unwin, *Town Planning in Practice*. The writings of D. H. Burnham and E. H. Bennett, Arnold W. Brunner, J. M. Carrère, Grosvenor Atterbury and Robert S. Peabody are also of value.

Among landscape architects the reports and papers of Frederick L. Olmsted give a systematic and up-to-date survey of city planning, its scope and methods. The volume on the life and work of Charles Eliot, *Landscape Architect*, gives much that is valuable, although it does not discuss the more recent developments in town and city planning. *Replanning Small Cities*, by John Nolen, contains six typical studies, from the point of view of the landscape architect, of six representative American cities, all with a population of one hundred thousand or under. The books by Charles Mulford Robinson—*Modern Civic Art*, *The Improvement of Towns and Cities*, and his reports, are all of great value from this point of view. Mention should also be made of a modest little primer entitled *Landscape Architecture*, by H. W. S. Cleveland. One of the most complete reviews is that of Mr. Thomas H. Mawson, entitled *Civic Art: Studies in Town Planning, Parks, Boulevards, and Open Spaces*.

City planning from the point of view of the health expert can be understood and appreciated by consulting such books as *Sanitation and Sanitary Engineering*, by William Paul Gerhard; *The Health of the City*, by Hollis Godfrey; *Civics and Health*, by William H. Allen; *Municipal Engineering and Sanitation*, by M. N. Baker.

There are many books and many writers that approach town and city planning from a point of view which may be termed that of the sociologist or publicist. Important among these are Frederick C. Howe, Charles Zueblin, Sylvester Baxter, E. E. Pratt, Dr. S. M. Lindsay, ex-President Charles W. Eliot, Joseph Lee, Jane Addams, Walter D. Moody, Patrick Geddes, Ebenezer Howard, and Canon and Mrs. S. A. Barnet.

From the point of view of business men, there are comparatively few books. Among the best is that of Richard M. Hurd, *Principles of City Land Values*. Mention should be made, also, of the writings of Dr. E. E. Pratt of New York University, and papers by H. D. W. English, formerly president of the Pittsburgh Chamber of Commerce. Especially interesting is the address which he prepared for the National Municipal League, entitled *The Functions of Business Bodies in Improving Civic Conditions*.

Legal conditions are often the determining ones in city-planning movements; therefore the point of view of the lawyer and the legislator is one that should not be overlooked. The two men in this country who have written most frequently and most ably are Andrew Wright Crawford and Flavel Shurtleff, both active in the National Conference on City Planning. Among English books may be mentioned especially *A Practical Guide to the Preparation of Town Planning Schemes*, by E. G. Bentley, and S. P. Taylor. In German the most useful volume is the *Kommunales Jahrbuch*, by H. Lindemann and A. Sudekum.

Much of the best material giving the views and recommendations of city administrators is to be had only in annual messages of mayors of various cities, and in other city documents. Mayor W. A. Magee of Pittsburgh and ex-Mayor John E. Reyburn of Philadelphia, have both written on the subject. Mr. Thomas Adams of the local government board, England, has prepared a number of valuable treatises and papers on the British town-planning act.

The point of view of the man in the street can be had from the writings of B. C. Marsh of New York, especially his *Introduction to City Planning*; Charles Zueblin, Sylvester Baxter, and G. D. Gallup. The latter has formulated a number of interesting statements for the Boston Chamber of Commerce. The papers of T. C. Horsfall, of England, are also important contributions, from this point of view.

In addition to the general surveys covering in a more or less general way the whole subject of town and city planning, but from special points of view, a town library ought to contain a few of the more important books dealing with each of the essential elements of town planning. These essential elements may be stated, for convenience, as follows: (1) the approaches to a city; (2) waterfronts; (3) city streets; (4) public buildings; (5) parks, parkways and playgrounds; (6) housing—garden cities and garden suburbs; (7) transportation.

The following is a brief list of books or articles dealing somewhat directly with each of these subjects:

1. **Approaches**

Modern City Gates. Huger Elliott.

The Terminal—The Gate of the City. W. Symmes Richardson.

The Problem of the Modern Terminal. Samuel O. Dunn.

2. **Water fronts**

A Study of Some Representative European Ports. F. L. Ford.

Holiday Study of Cities and Ports. R. A. Peabody.

The Port of Liverpool; Its Rise and Progress. Published by the Mersey Dock and Harbor Board.

The Port of Hamburg. E. J. Clapp.

Reports of the Dock and Harbor Board. Boston.

3. **City Streets**

Width and Arrangement of Streets. C. M. Robinson.

The Planning of City Streets. B. Antrim Haldeman.

Street Traffic Regulations. William P. Eno.

Shade Trees in Towns and Cities. William Solotaroff.

And especially the papers, treatises and reports of Nelson P. Lewis, chief engineer of the board of estimate and apportionment of New York City.

4. **Public buildings**

Der Städtebau nach seinen künstlerischen Grundsätzen. Camillo Sitte.

Papers by Arnold W. Brunner.

The Modern School House. Prof. A. D. Hamlin.

5. **Parks, parkways and playgrounds.**

The Writings of F. L. Olmsted, Sr.

Reports by Olmsted Brothers.

Charles Eliot, Landscape Architect. C. W. Eliot.

Public Park Facilities in the United States. John Nolen.

American Playgrounds. E. B. Mero.

Amerikanische Park Anlagen. Werner Hegemann.

Proceedings of the American Society of Landscape Architects.

6. Housing. Garden cities and garden suburbs.

Housing Reform. Lawrence Veiller.

Model Tenement House Law. Lawrence Veiller.

Proceedings of the National Housing Association. Bulletin of the Bureau of Labor. G. W. W. Hanger.

Report on Model Houses. George N. Sternberg.

Garden Cities of Tomorrow. Ebenezer Howard.

Town Planning in Practice. Raymond Unwin.

Practical Housing. J. S. Nettlefold.

The Housing Handbook. W. Thompson.

Housing Up To Date. W. Thompson.

Handbuch des Wohnungswesens und der Wohnungsfrage. Dr. Rudolph Eberstadt.

Housing Survey. Carol Aronovici.

7. Transportation.

Papers, Treatises and Articles by M. R. Maltbie; Bion J. Arnold; H. C. Wright; E. P. Goodrich.

Street Traffic Regulations. W. P. Eno.

Proceedings of the National Conference on City Planning, and the American Society of Civil Engineers.

Among the proceedings of national associations which should be included in a town-planning library are the following, most of which have already been mentioned. National Conference on City Planning; American Society of Civil Engineers; National Housing Association; American Civic Association; American Institute of Architects; American Society of Landscape Architects; Royal Institute of British Architects.

The most valuable and complete check list of references on city planning has been recently published by the special libraries association, being compiled by the division of bibliography, Library of Congress, and the department of landscape architecture, Harvard University.

The publications giving most attention to city-planning topics regularly are: *The American City*, New York; *Landscape Architecture*, New York; *Town Planning Review*, Liverpool, England; *Garden Cities and Town Planning*, London, England; *Der Städtebau*, Berlin, Germany; *Engineering News*, New York; *Municipal Journal*, New York; *American Architect*, New York.

The above list is not in any sense complete, and others would probably make different selections. It is believed, however, that the list as outlined would prove a useful one for a town or small city

library which wished to appeal to and provide for the general reader. The only large classification that has been omitted is the list of town- and city-planning reports, about a hundred in number, prepared by various engineers, architects and landscape architects for particular cities. Such a list can readily be had. From the list given, it would be comparatively easy for the librarian or the reader to follow any subject more in detail, and to get additional references.

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